

NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA)	
		Tulsa, Oklahoma (TSA)	
MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS		REPORT FOR:	
		MONTH September	YEAR 2020
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE Steven F. Piltz (Meteorologist-in-Charge)	
		DATE October 2, 2020	

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

An "X" in the box indicates no flood stages were reached in this Hydrologic Service Area (HSA) during the month above.

Heavy rains at the end of August and into the beginning of September 2020 resulted in major flooding along the Poteau River. Southeast OK continued to see heavy rain this month, while the majority of eastern OK and northwest AR received below normal precipitation. Normal rainfall for September ranges from 4.2 inches in Okmulgee County to 5.4 inches in Delaware County. In the Ozark region of northwest Arkansas, rainfall averages 4.5 inches for the month. This report, past E-5 reports, and monthly hydrology and climatology summaries can be found at <http://www.weather.gov/tsa/hydro-monthly-summary>.

Monthly Summary

Using the radar-derived estimated observed precipitation from the RFCs (Fig. 1a), rainfall totals for September 2020 ranged from around 1.5" to around 14" across eastern OK and northwest AR, with most of the area receiving 2"-6". These rainfall totals correspond to 110% to 250% of the normal September rainfall for southeast OK and 25% to 90% of the normal September rainfall for most of the remainder of eastern OK and northwest AR (Fig. 1b).

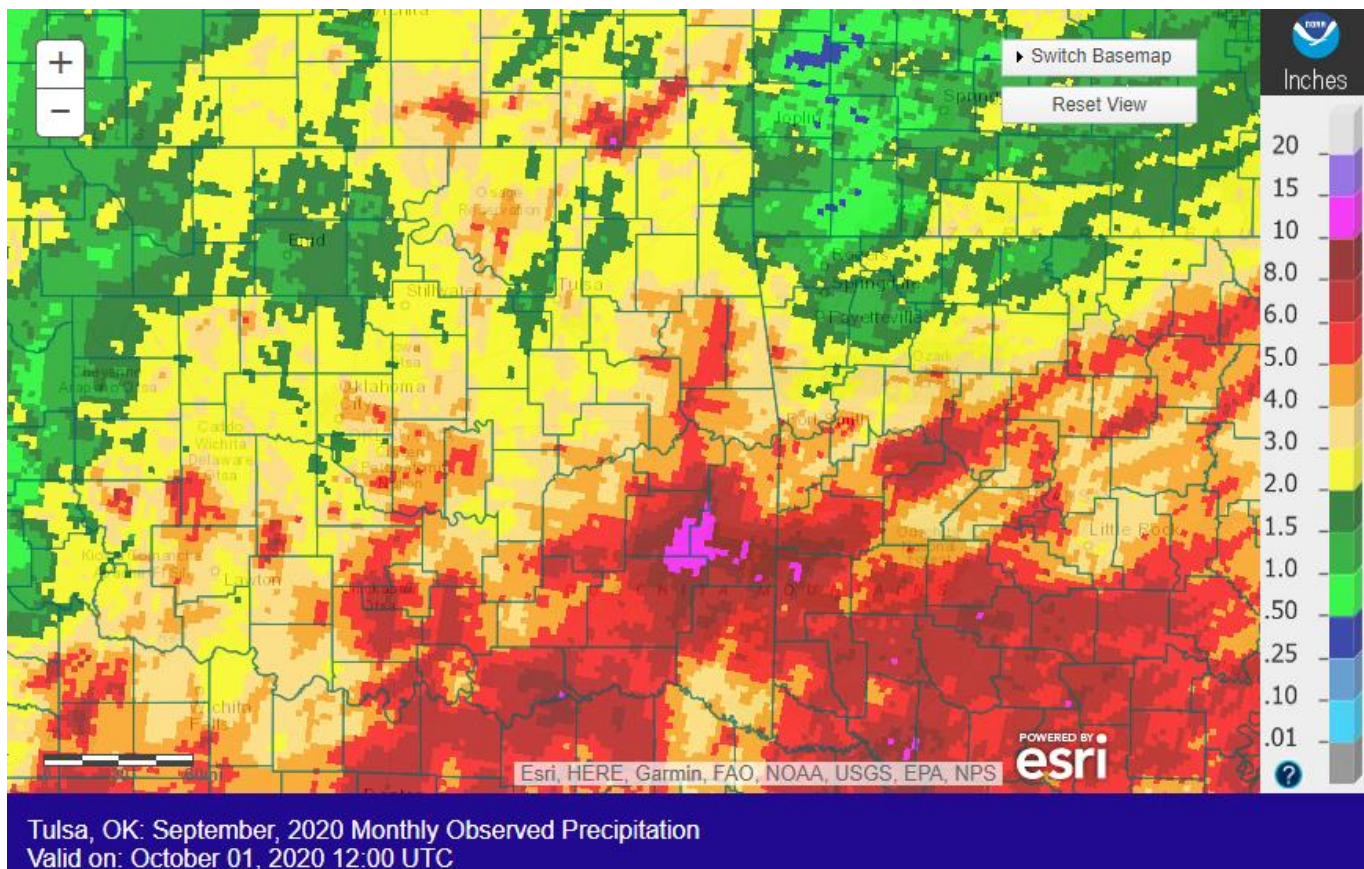


Fig. 1a. Estimated Observed Rainfall for September 2020

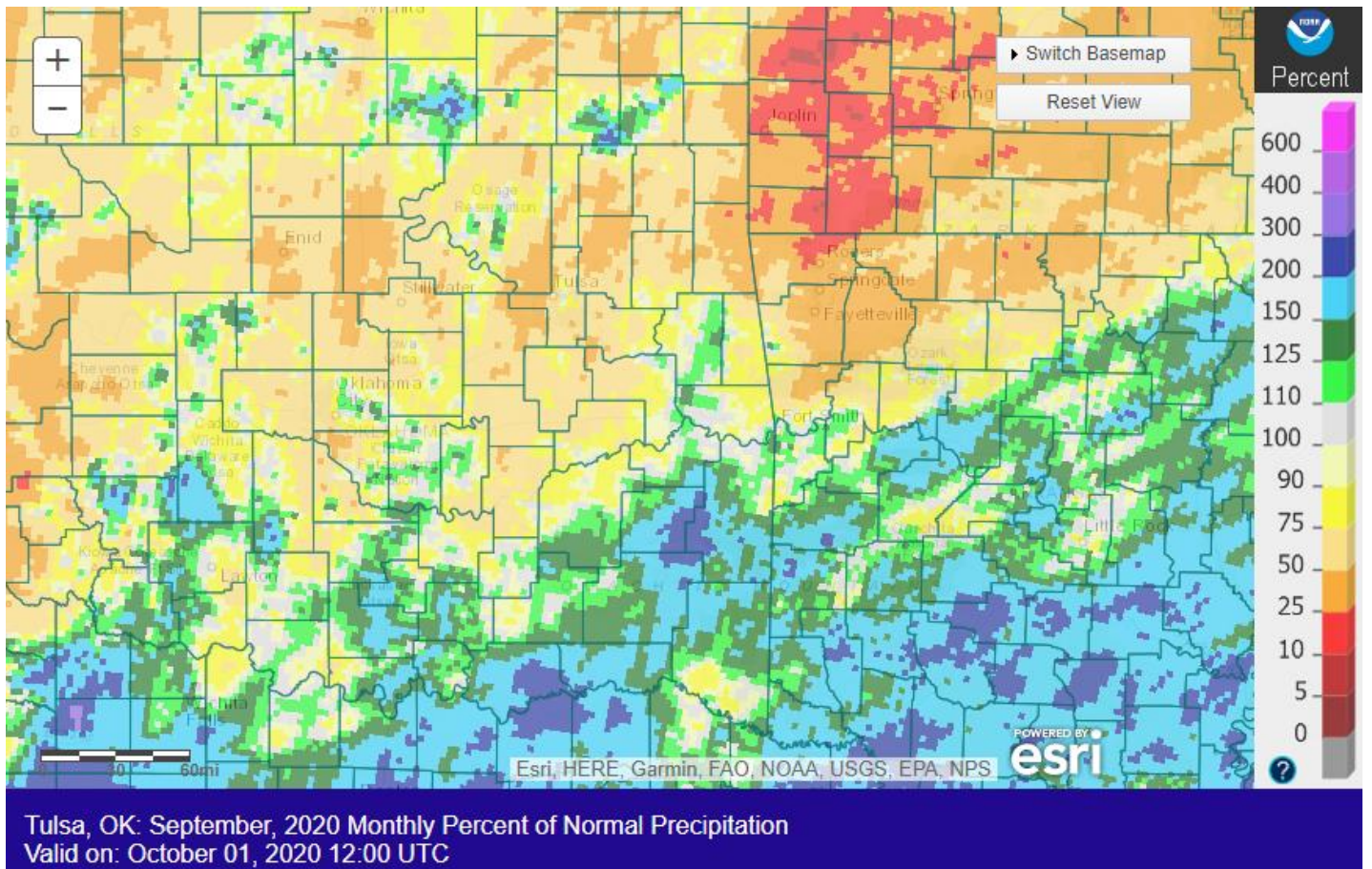


Fig. 1b. Estimated % of Normal Rainfall for September 2020

In Tulsa, OK, September 2020 ranked as the 33rd coldest September (72.0°F, tied 1913; since records began in 1905) and the 52nd wettest September (3.75"; since records began in 1888). Fort Smith, AR had the 56th coldest September (73.5°F, tied 1941, 1891; since records began in 1882) and the 8th wettest September (7.37"; since records began in 1882). Fayetteville, AR had the 35th warmest (69.5°F) and the 21st driest (2.49") September since records began in 1949.

Some of the larger precipitation reports (in inches) for September 2020 included:

Talihina, OK (meso)	13.20	Clayton, OK (meso)	11.18	Wister, OK (meso)	10.07
Wister 3.0NNE, OK (coco)	9.40	Wilburton, OK (meso)	9.31	Krebs 0.3 WNW, OK (coco)	9.23
Vian 5.3ENE, OK (meso)	8.71	Van Buren 0.7SSE, AR (coco)	8.16	Eufaula 4.6ENE, OK (coco)	8.13

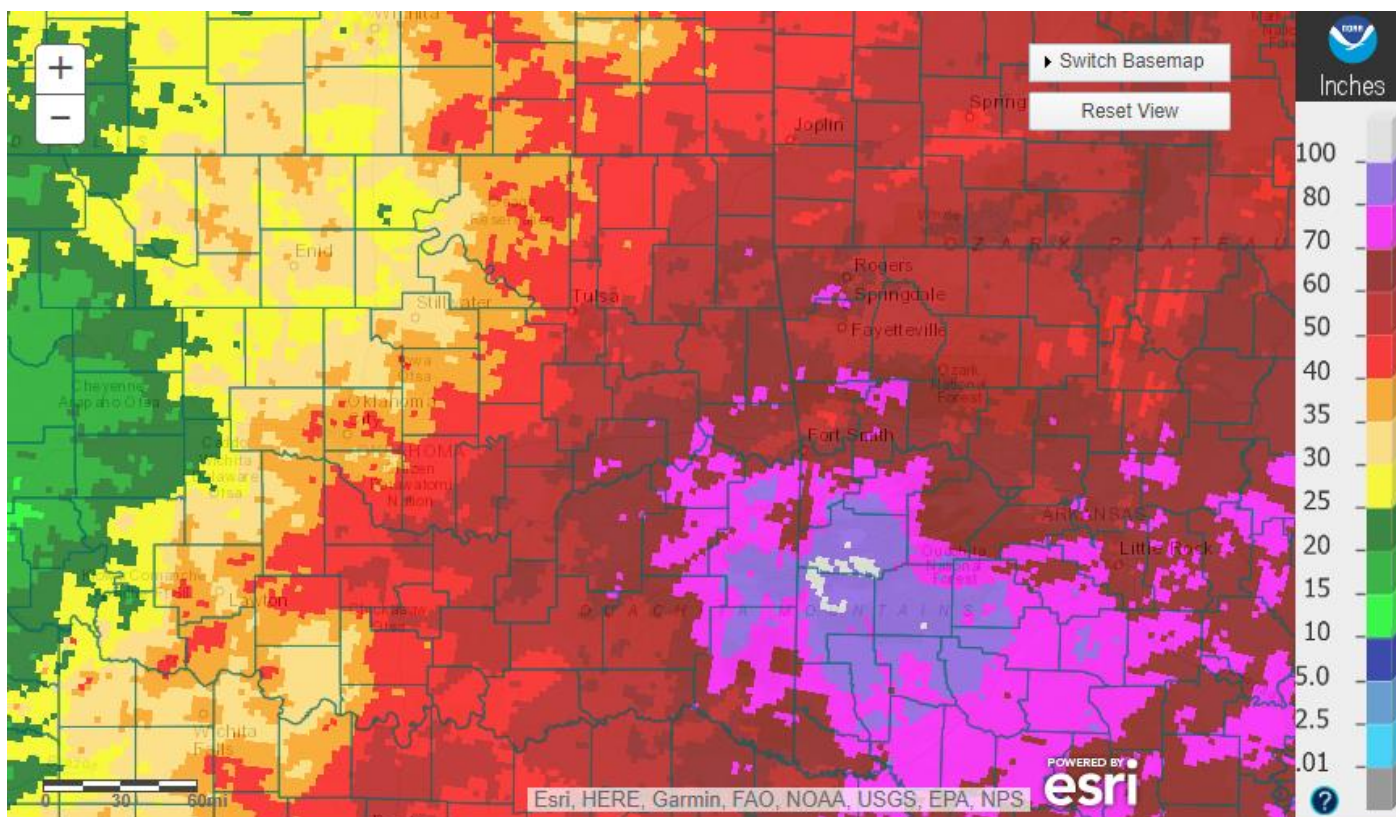
Some of the lowest precipitation reports (in inches) for September 2020 included:

Pea Ridge 0.2WSW, AR (coco)	1.28	Nowata, OK (meso)	1.79	Jay, OK (meso)	1.93
Rogers 2.4SSW, AR (coco)	1.98	Pawnee, OK (meso)	2.06	Fayetteville, AR (ASOS)	2.07
Skiatook, OK (meso)	2.08	Jay 3.3NNE, OK (coco)	2.10	Busch 0.4E, OK (coco)	2.11

According to statistics from the [Oklahoma Climatological Survey](#) (OCS) Mesonet:

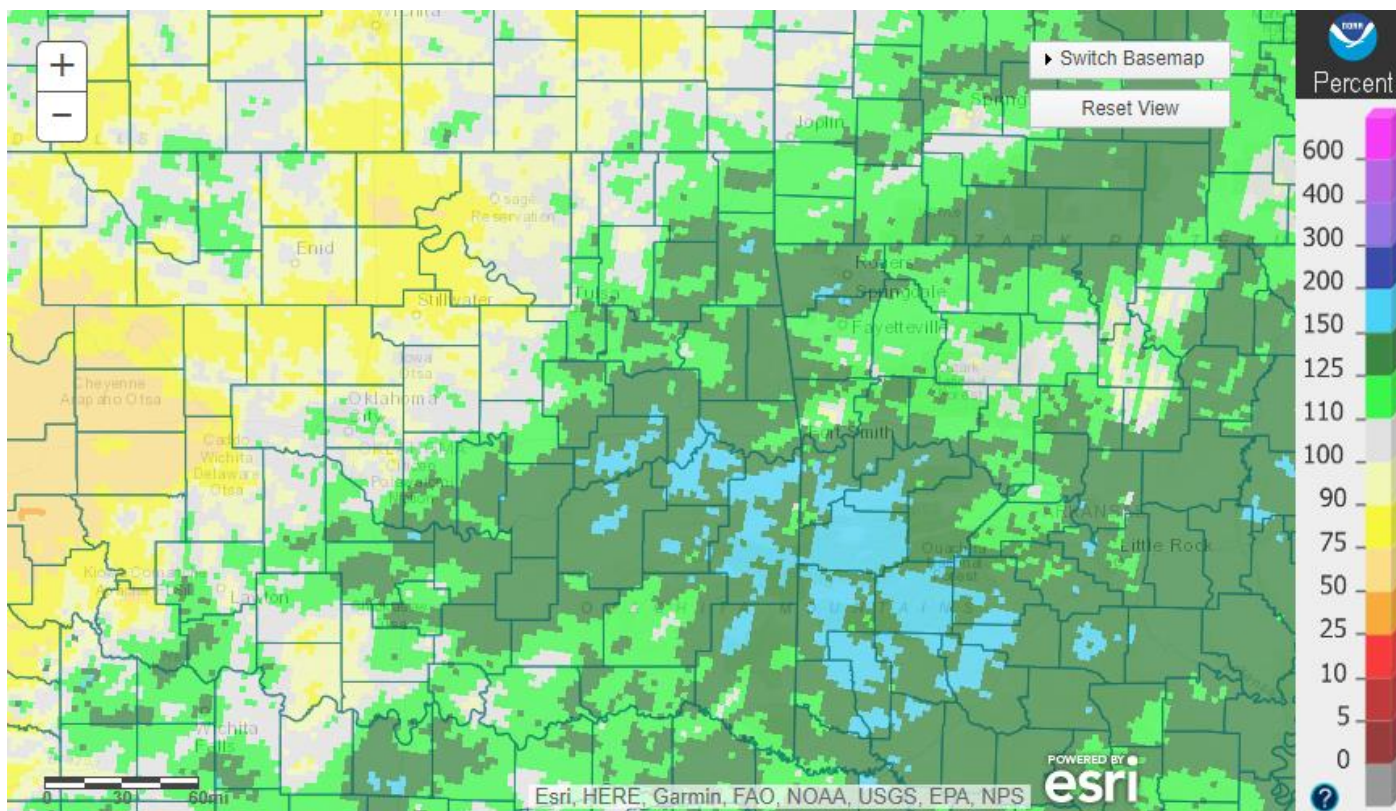
Rank since 1921	Last 30 Days (Sep 1 – Sep 30)	Last 60 Days (Aug 2 – Sep 30)	Last 90 Days (Jul 3 – Sep 30)	Last 120 Days (Jun 3 – Sep 30)	Last 180 Days (Apr 4 – Sep 30)	Year-to-Date (Jan 1 – Sep 30)	Water Year 2020 (Oct 1, 2019 – Sep 30, 2020)
Northeast OK	39 th driest	29 th driest	36 th wettest	38 th driest	46 th driest	19 th wettest	17 th wettest
East Central OK	32 nd wettest	12 th wettest	6th wettest	24 th wettest	19 th wettest	6th wettest	4th wettest
Southeast OK	12 th wettest	4th wettest	4th wettest	14 th wettest	11 th wettest	5th wettest	4th wettest
Statewide	37 th wettest	43 rd wettest	19 th wettest	45 th wettest	46 th driest	22 nd wettest	20 th wettest

Water Year 2020 (October 1, 2019 – September 30, 2020)



Tulsa, OK: 2020 Water Year (Oct. 1) Observed Precipitation
Valid on: October 01, 2020 12:00 UTC

Fig. 2a. Estimated Observed Rainfall for Water Year 2020



Tulsa, OK: 2020 Water Year (Oct. 1) Percent of Normal Precipitation
Valid on: October 01, 2020 12:00 UTC

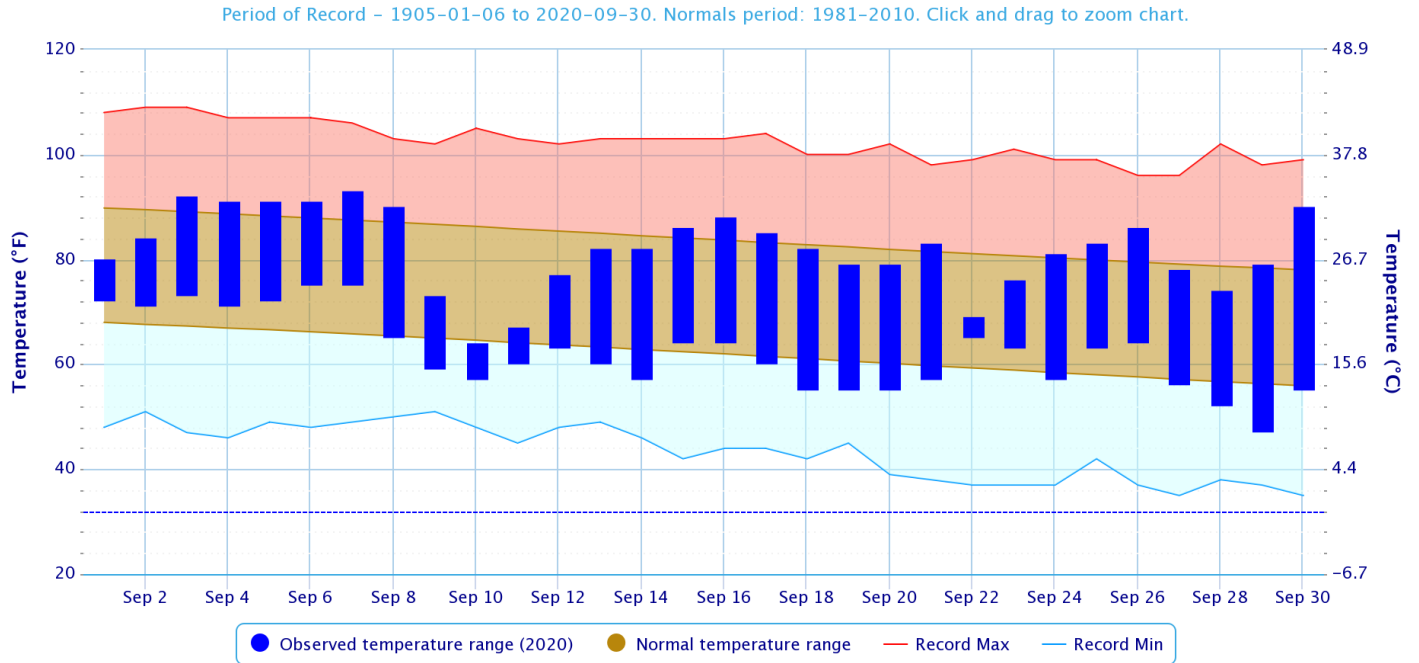
Fig. 2b. Estimated % of Normal Rainfall for Water Year 2020

Using the radar-derived estimated observed precipitation from the RFCs (Fig. 2a), rainfall totals for Water Year 2020 was one of extremes, ranging from around 30" in eastern Kay, western Osage, and western Pawnee Counties to near 90" in southeast OK, with most of the area receiving 40"-65". These rainfall totals correspond to around 75% to near 200% of the normal Water Year rainfall for eastern OK and northwest Arkansas (Fig. 2b), with the above normal rainfall generally occurring along and south of I-44.

Some of the larger precipitation reports (in inches) for Water Year 2020 included:

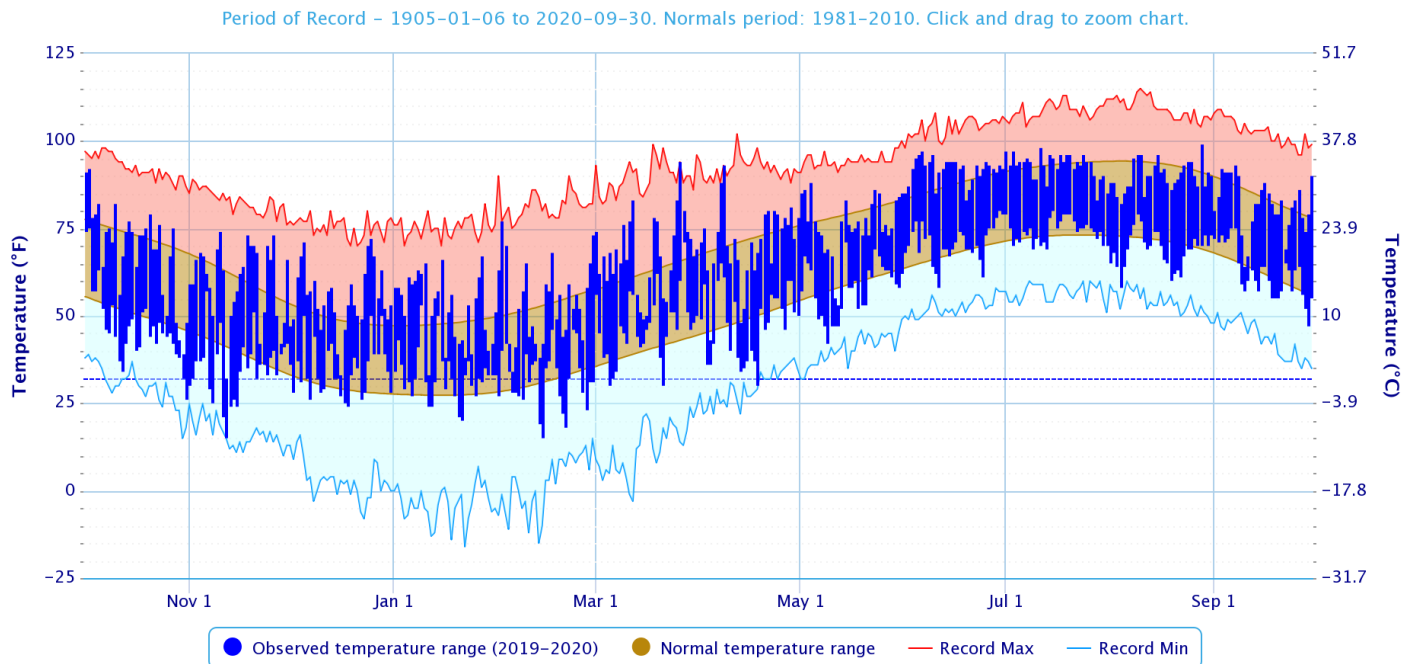
Springdale 0.6E, AR (coco)	73.30	Winslow 7NE, AR (coop)	72.87	Hindsville 10NNE, OK (coop)	72.61
Wister, OK (meso)	72.6	Stigler, OK (meso)	72.5	Upper Spavinaw Port, OK (coop)	72.08
Webbers Falls, OK (meso)	71.4	Bunch 0.8N, OK (coco)	71.40	Clayton, OK (meso)	70.6

Daily Temperature Data – Tulsa Area, OK (ThreadEx)



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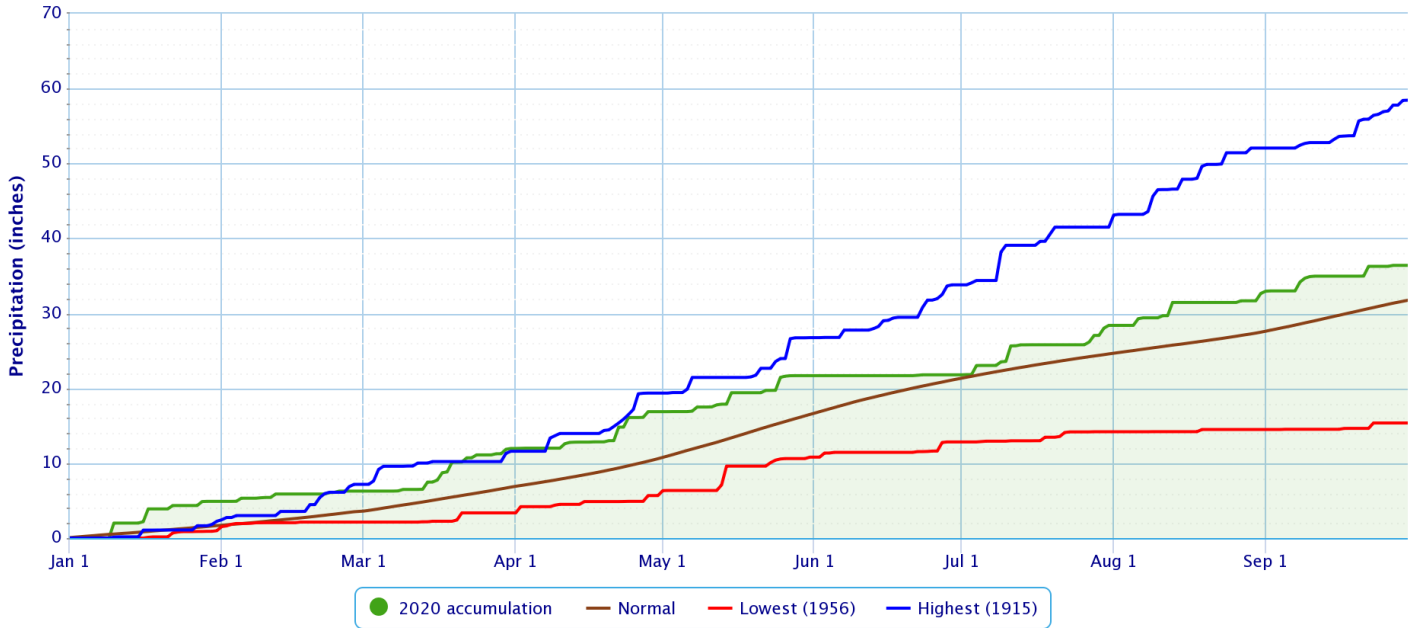
Daily Temperature Data – Tulsa Area, OK (ThreadEx)



Powered by ACIS

Accumulated Precipitation – Tulsa Area, OK (ThreadEx)

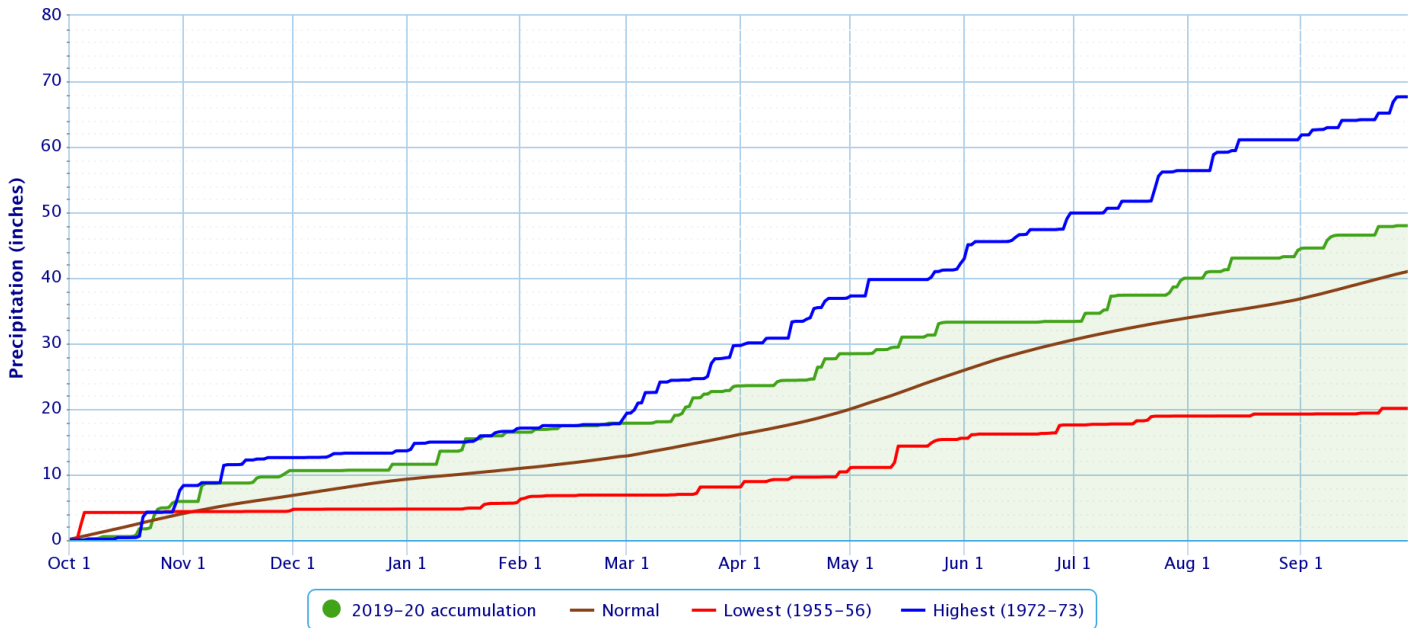
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Accumulated Precipitation – Tulsa Area, OK (ThreadEx)

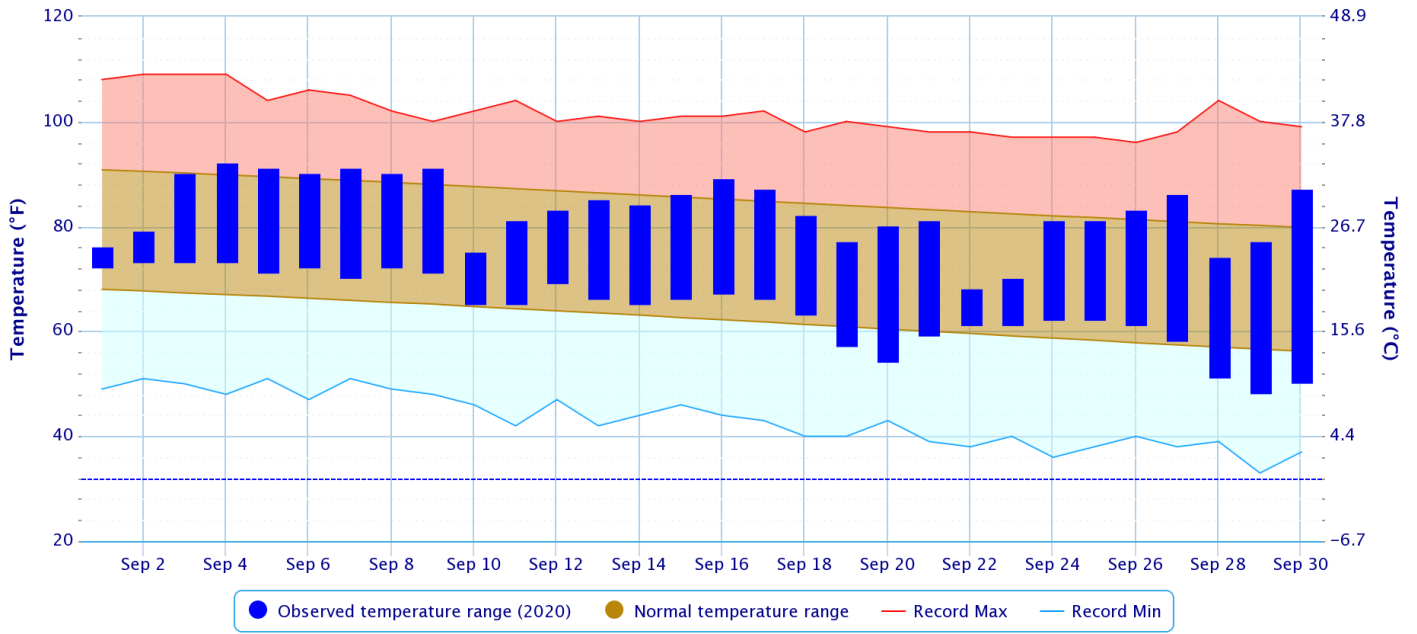
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – Fort Smith Area, AR (ThreadEx)

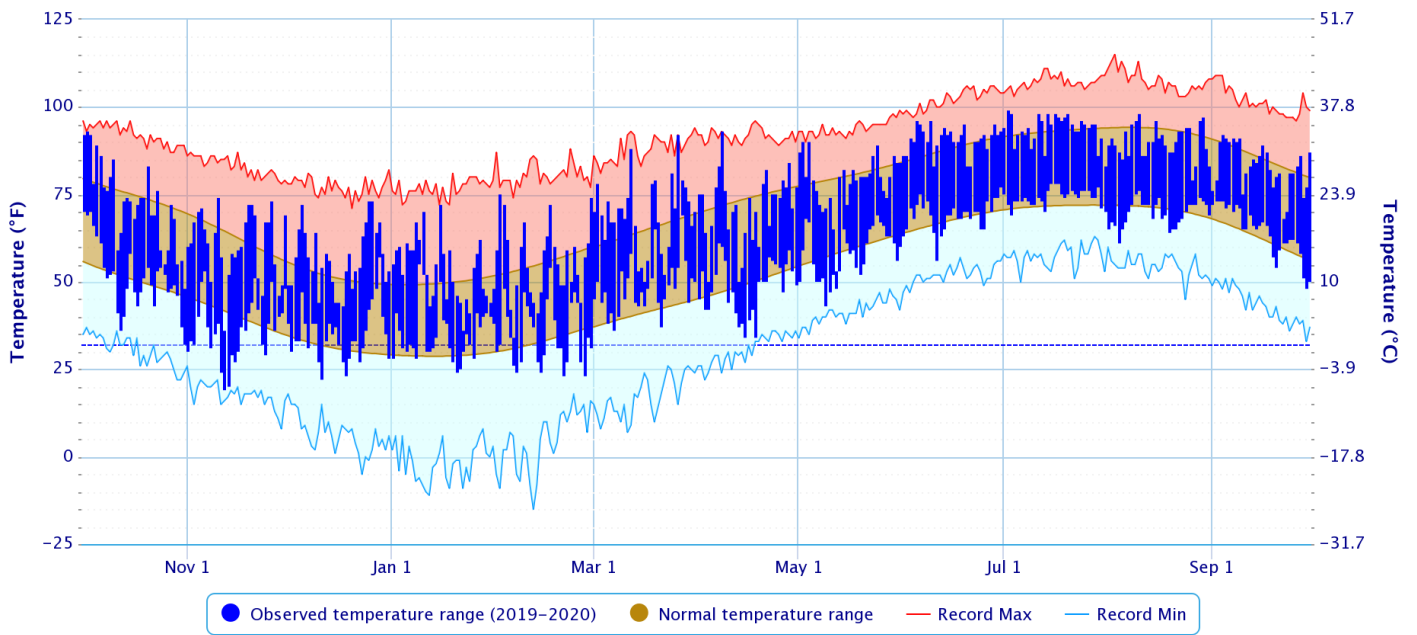
Period of Record – 1882-06-01 to 2020-09-30. Normals period: 1981-2010. Click and drag to zoom chart.



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Daily Temperature Data – Fort Smith Area, AR (ThreadEx)

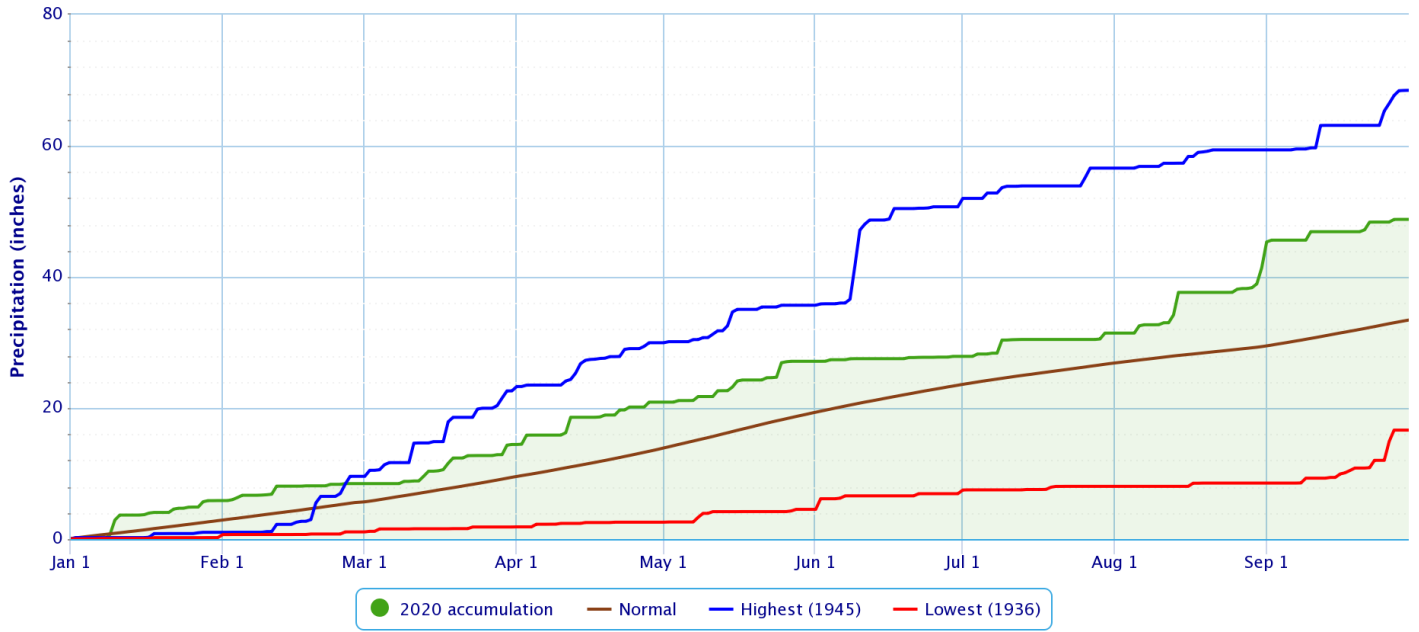
Period of Record – 1882-06-01 to 2020-09-30. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation – Fort Smith Area, AR (ThreadEx)

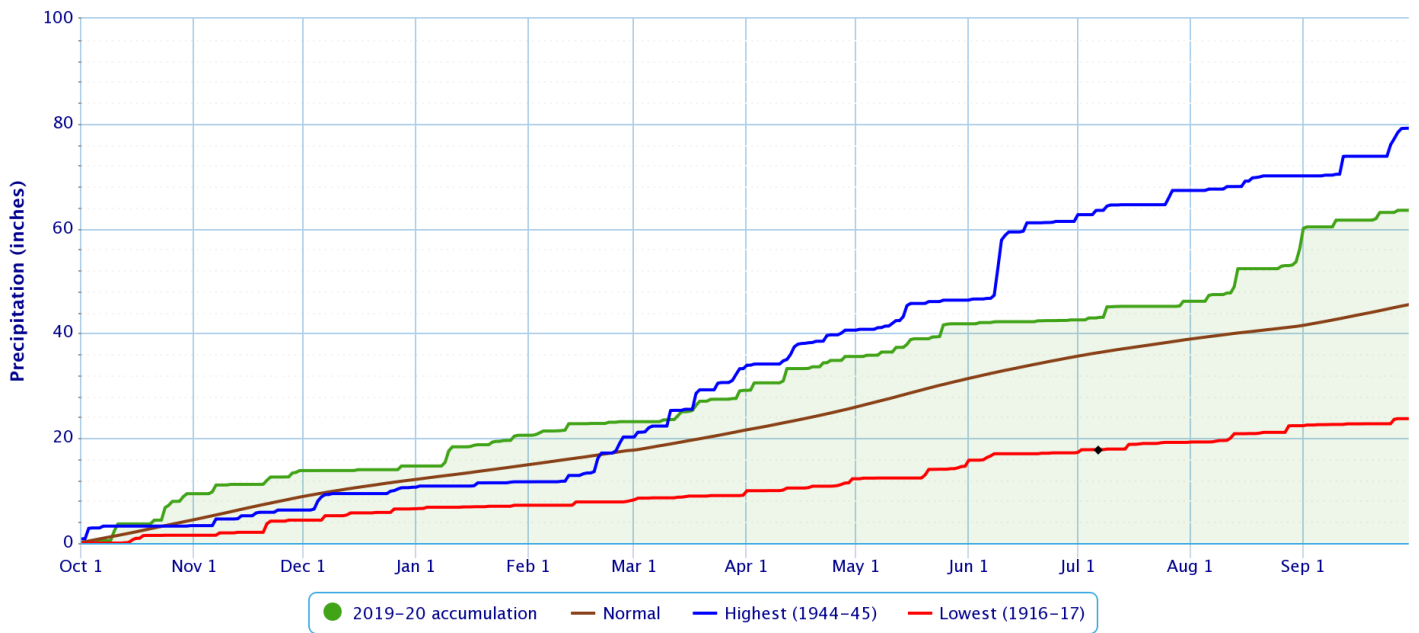
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Accumulated Precipitation – Fort Smith Area, AR (ThreadEx)

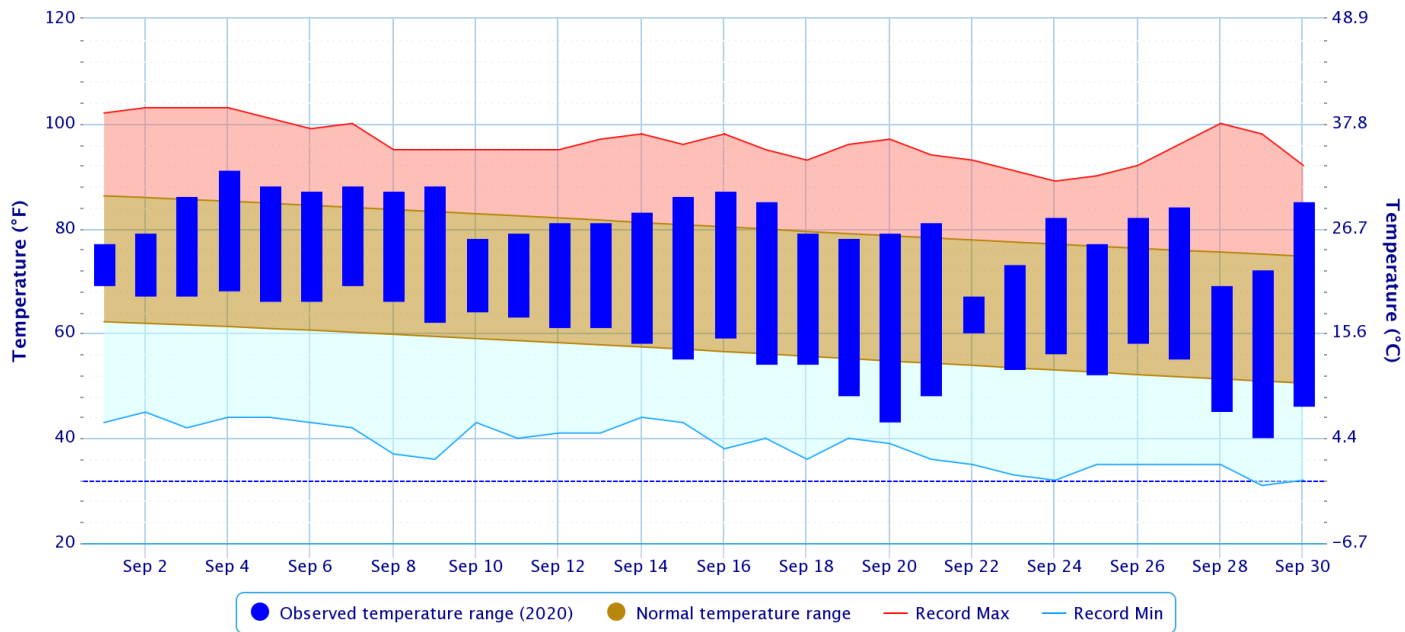
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

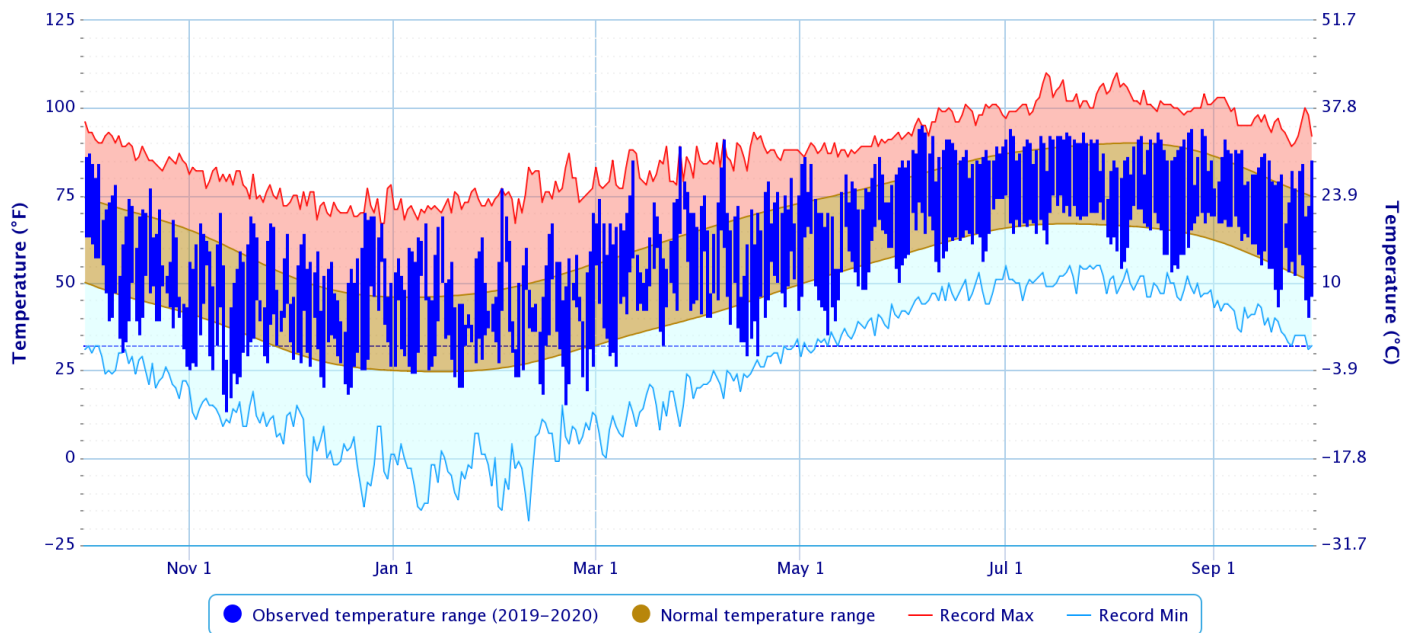
Period of Record – 1949-07-14 to 2020-09-30. Normals period: 1981-2010. Click and drag to zoom chart.



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

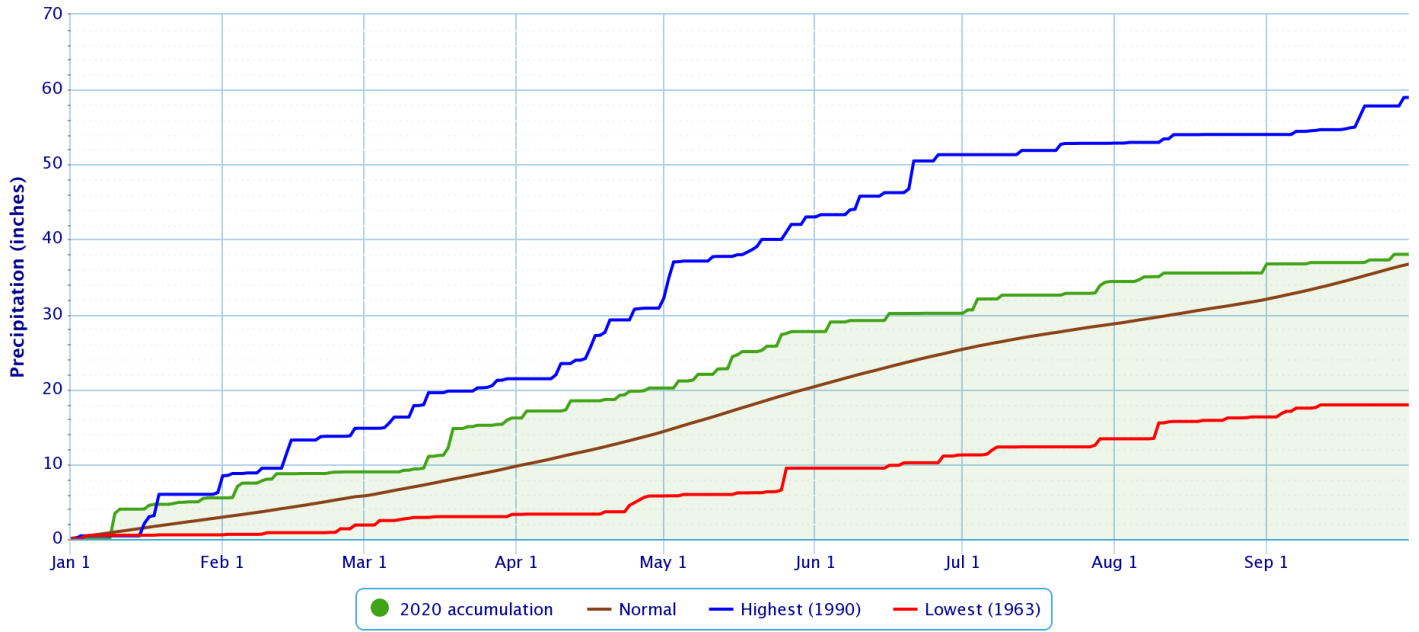
Period of Record – 1949-07-14 to 2020-09-30. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation – FAYETTEVILLE DRAKE FIELD, AR

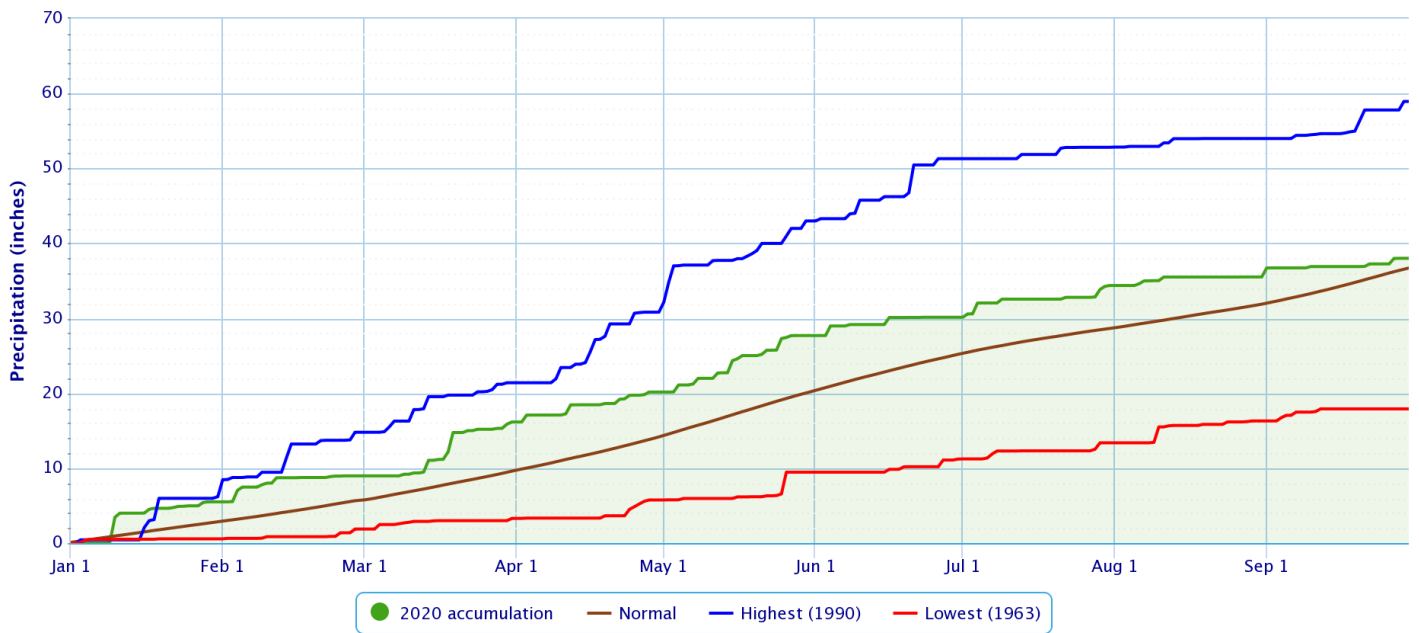
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Accumulated Precipitation – FAYETTEVILLE DRAKE FIELD, AR

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

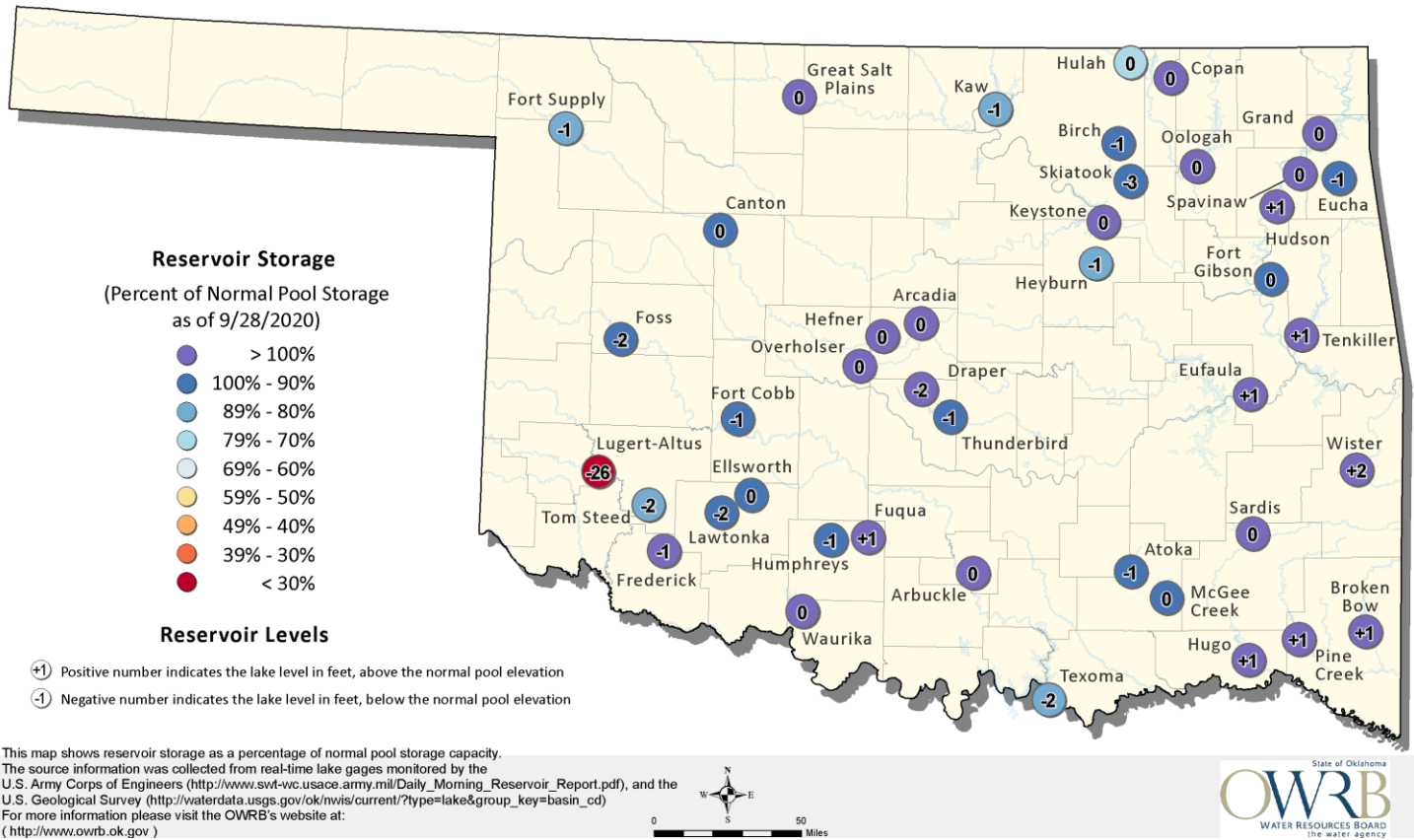


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Reservoirs

Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 9/28/2020



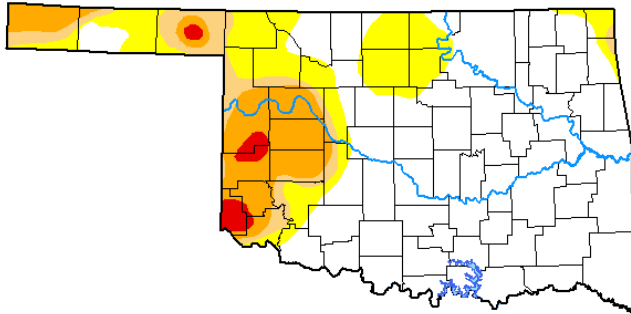
According to the USACE, most of the lakes in the HSA were within $\pm 3\%$ of top of their conservation pools as of 10/01/2020. However, a few lakes were using a higher percentage of their flood control pools: Tenkiller Lake 4%, Eufaula 4%, and Hudson Lake 4%. Some lakes in northeast OK were operating below 3% of the top of their conservation pools: Heyburn Lake 85%, Kaw Lake 91%, Birch Lake 91%, and Skiatook Lake 91%.

Drought

According to the [U.S. Drought Monitor](#) (USDM) from September 29, 2020 (Figs. 3, 4), a small area of D1 (Moderate Drought) was impacting a portion of Ottawa and Delaware Counties in eastern OK and Benton and Carrol Counties in northwest AR. Abnormally Dry (but not in drought) conditions were occurring in portions of Osage, Pawnee, Ottawa, Delaware, and Craig Counties in eastern OK and Benton, Carrol, Washington, and Madison Counties in northwest AR.

U.S. Drought Monitor Oklahoma

September 29, 2020
(Released Thursday, Oct. 1, 2020)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	66.79	33.21	17.71	11.97	1.55	0.00
Last Week 09-22-2020	73.41	26.59	17.20	10.80	1.00	0.00
3 Months Ago 06-30-2020	34.87	65.13	43.03	15.39	4.46	0.10
Start of Calendar Year 12-31-2019	76.45	23.55	10.47	3.64	0.00	0.00
Start of Water Year 10-01-2019	71.94	28.06	11.08	1.01	0.00	0.00
One Year Ago 10-01-2019	71.94	28.06	11.08	1.01	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Brad Rippey
U.S. Department of Agriculture

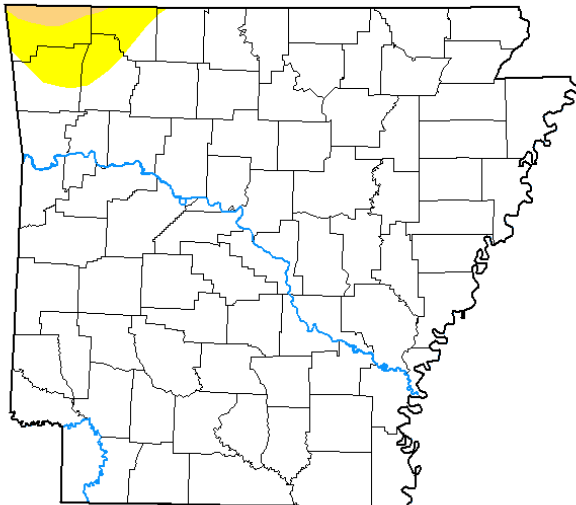


droughtmonitor.unl.edu

Fig. 3. Drought Monitor for Oklahoma

U.S. Drought Monitor Arkansas

September 29, 2020
(Released Thursday, Oct. 1, 2020)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	96.07	3.93	0.62	0.00	0.00	0.00
Last Week 09-22-2020	93.82	6.18	0.22	0.00	0.00	0.00
3 Months Ago 06-30-2020	94.43	5.57	0.00	0.00	0.00	0.00
Start of Calendar Year 12-31-2019	86.68	13.32	4.35	0.31	0.00	0.00
Start of Water Year 10-01-2019	54.35	45.65	11.77	5.79	0.00	0.00
One Year Ago 10-01-2019	54.35	45.65	11.77	5.79	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Brad Rippey
U.S. Department of Agriculture



droughtmonitor.unl.edu

Fig. 4. Drought Monitor for Arkansas

Outlooks

The [Climate Prediction Center](#) (CPC) outlook for October 2020 (issued September 30, 2020) indicates an enhanced chance for above normal temperatures northwest of I-44 and an equal chance for above, near, and below normal temperatures elsewhere in eastern OK and northwest AR. This outlook also indicates a greatly enhanced chance for below median precipitation across all of eastern OK and northwest AR. From CPC, “troughing downstream of western CONUS ridging is to be quite strong for approximately the first week or so of October supporting the passage of strong cold fronts across the eastern and southern CONUS supplying ample below-normal temperatures primarily for the lower Ohio Valley, Tennessee Valley and parts of the Southeast and Gulf Coast. The dilemma for the forecast in these areas is that will this cool signal (below-normal temperatures) remain by the end of the month, when statistical and dynamical model guidance supports more mild, moderate temperatures for much of the CONUS during the remaining portion of October as a more zonal, positively anomalous 500-hPa height pattern evolves... The favored large-scale pattern in the mean during October is forecast to be a ridge-trough pattern stretching from the western to eastern CONUS which is dry pattern for much of CONUS as surface high pressure is likely to prevail more often than not.”

For the 3-month period October-November-December 2020, CPC is forecasting an enhanced chance for above normal temperatures and an enhanced chance for below median precipitation across all of eastern OK and northwest AR (outlook issued September 17, 2020). This outlook is based on La Niña impacts, both statistical and dynamical forecast tools, and decadal timescale climate trends. According to CPC, the combined effect of the ocean-atmosphere system is consistent with La Niña conditions. There is a 75% chance of La Niña continuing through the Northern Hemisphere winter 2020-21. CPC continues the La Niña Advisory.

Summary of Heavy Precipitation Events Daily quality-controlled rainfall maps can be found at: http://water.weather.gov/precip/index.php?location_type=wfo&location_name=tsa

An active weather pattern at the end of August and into the beginning of September brought flash flooding and major river flooding. During the morning of August 29th, a line of thunderstorms moved across southern KS and southern MO, bringing rain to the adjacent counties in northeast OK and northwest AR. A cold front then moved south through the region and was located near I-40 by the afternoon. A very unstable airmass resided south of the front, and thunderstorms developed over northwest AR and southeast OK during the mid-evening hours. As the low-level jet strengthened, the storms increased in coverage across southeast OK and west central AR before waning around midnight. Scattered showers and thunderstorms continued over southeast OK and west central AR during the overnight hours, while another thunderstorm complex approached from central OK. This MCS moved into east central and southeast OK just before sunrise on the 30th and continued to push eastward into northwest AR through the morning before dissipating before noon. PWAT values near 2.5”, which is around 3 standard deviations from normal, allowed for efficient rain production. By 7 am on the 30th, rainfall totals ranged from around 0.50” to around 5” (Fig. 5).

PWAT values remained near 2” during the early morning hours of the 31st as showers and thunderstorms developed between Highway 412 and I-40 in response to an approaching upper-level wave and stronger low-level jet axis. These storms continued to expand in coverage, with scattered showers and thunderstorms across eastern OK and northwest AR by sunrise. Rainfall totals at 7am ranged from around 0.50” to around 2” from Creek County through west central AR (Fig. 6). The scattered showers and thunderstorms continued through the morning, finally dissipating by late afternoon. A cold front then moved into the region, with thunderstorms rapidly developing during the early evening hours across central into northeast OK. Widespread showers and thunderstorms continued across primarily northeast and east central OK through the evening hours as additional lift moved in from the west. This activity then expanded into western AR and southeast OK after midnight, continuing across much of the HSA through the overnight and morning hours of September 1. By 7am on Sep. 1, a large portion of east central and southeast OK and west central AR had received 1.5” to around 6” of rain, with a large area from northeast Latimer County into northern Le Flore County receiving 6”-8” of rain (Figs. 7, 8). Flash flooding occurred from this heavy rain, and numerous reports of swift water rescues and people needing evacuation from their homes prompted a Flash Flood Emergency for northern Le Flore County during the early morning of the 1st. Widespread showers and thunderstorms continued through much of the day, slowly ending from north to south during the afternoon and evening. By 5 pm on the 1st, widespread 4”-10” had fallen over portions of southeast OK (Figs. 7, 11), with the OK Mesonet

station at Clayton measuring 7.77" (Fig. 9). This rainfall caused major flooding along the Poteau River near Panama, with moderate flooding upstream near Poteau (see preliminary hydrographs at the end of this report and the E3 Report for details). While most of the rain had ended by mid-evening on the 1st, some scattered showers and thunderstorms continued through the overnight and into early morning hours of the 2nd across far southeast OK and west central AR.

Showers and thunderstorms developed around noon on the 8th along an unseasonably strong cold front from north central OK into southeast KS. The cold front became nearly stationary, allowing scattered storms to continue over this area through the afternoon. These storms became more widespread along and north of the front over northeast OK during evening hours. Convection continued through the overnight hours, decreasing in coverage by sunrise on the 9th, and shifting back to the west by mid-morning. Rainfall totals were around 0.50" to near 4" northwest of an Okmulgee to Nowata line in northeast OK (Fig. 12).

The shallow cold front stalled out from about a Grove to McAlester to Durant line by mid-day on the 9th. Behind the front, temperatures stayed steady in the 50s and 60s with overcast skies, and ahead of the front, skies were partly cloudy with temperatures warming into the low to mid 80s. Widespread showers and thunderstorms continued over central OK, shifting slightly into eastern OK during the afternoon and evening. Isolated showers and thunderstorms developed further east across southeast and east central OK during the evening. By midnight of the 10th, scattered showers and thunderstorms had spread across all of eastern OK and far western AR as the nearly continuous feed of deep moisture from the south continued into the region. This activity ended from west to east during the day, finally exiting the region by noon on the 10th. Between the thunderstorms during the evening and the training storms through the early morning hours, portions of Latimer, Le Flore, Pushmataha, and Haskell Counties received 1.5"-7" of rain (Figs. 13-15). This rainfall fell over the recently flooded Poteau River, causing additional minor flooding along the Poteau River near Panama (see preliminary hydrographs at the end of this report and the E3 Report for details). The remainder of the area received around 0.25" to near 3" of rain.

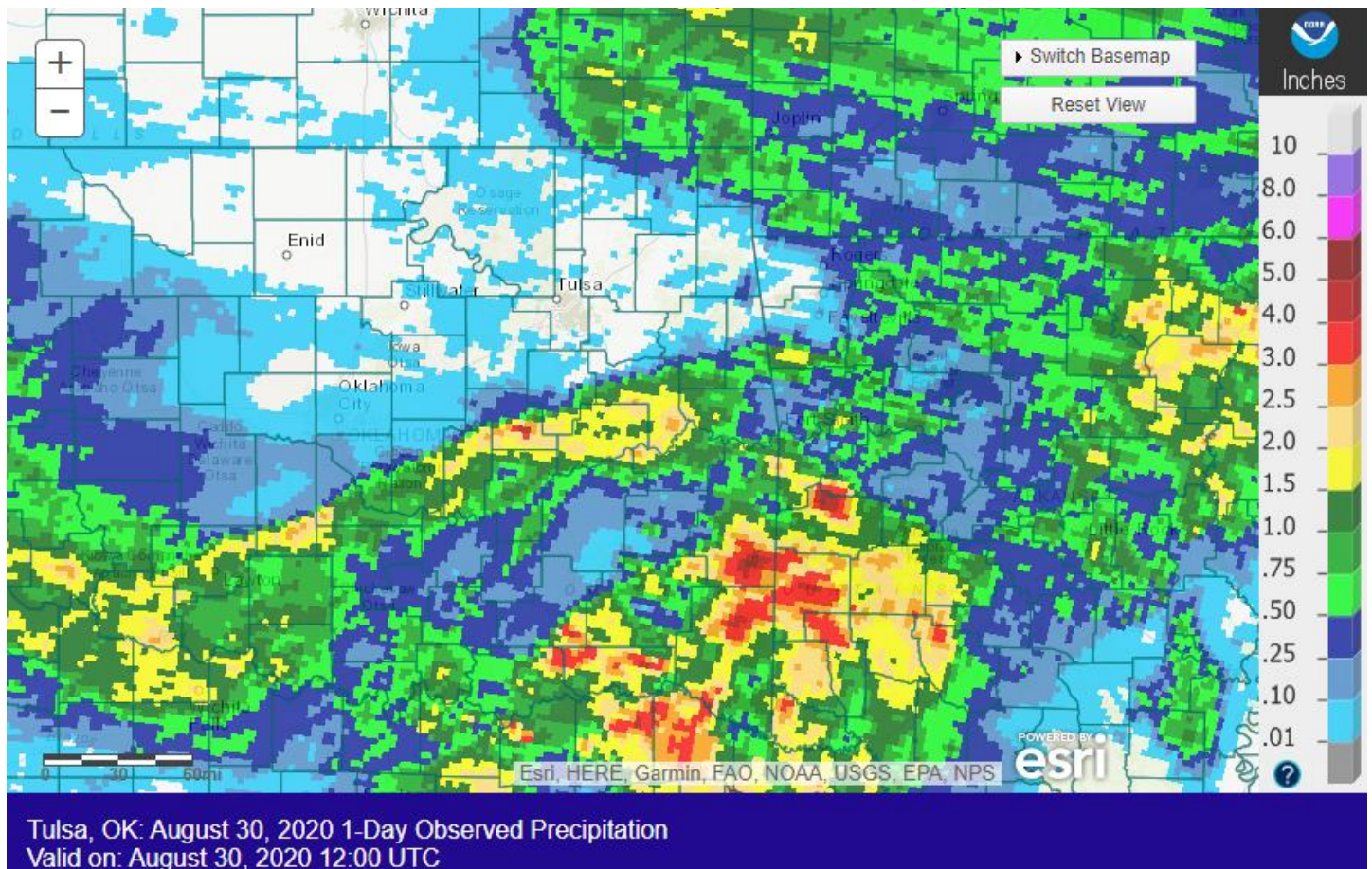
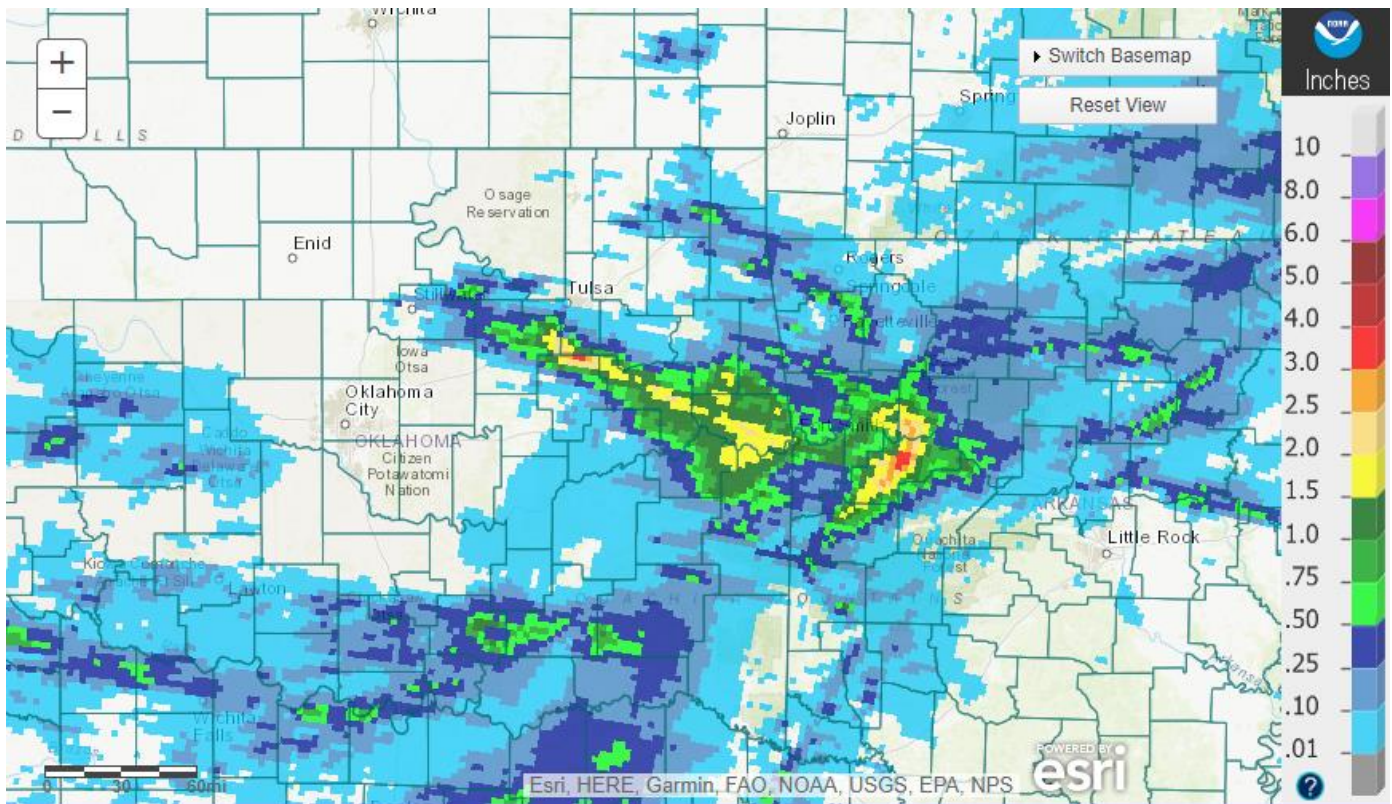
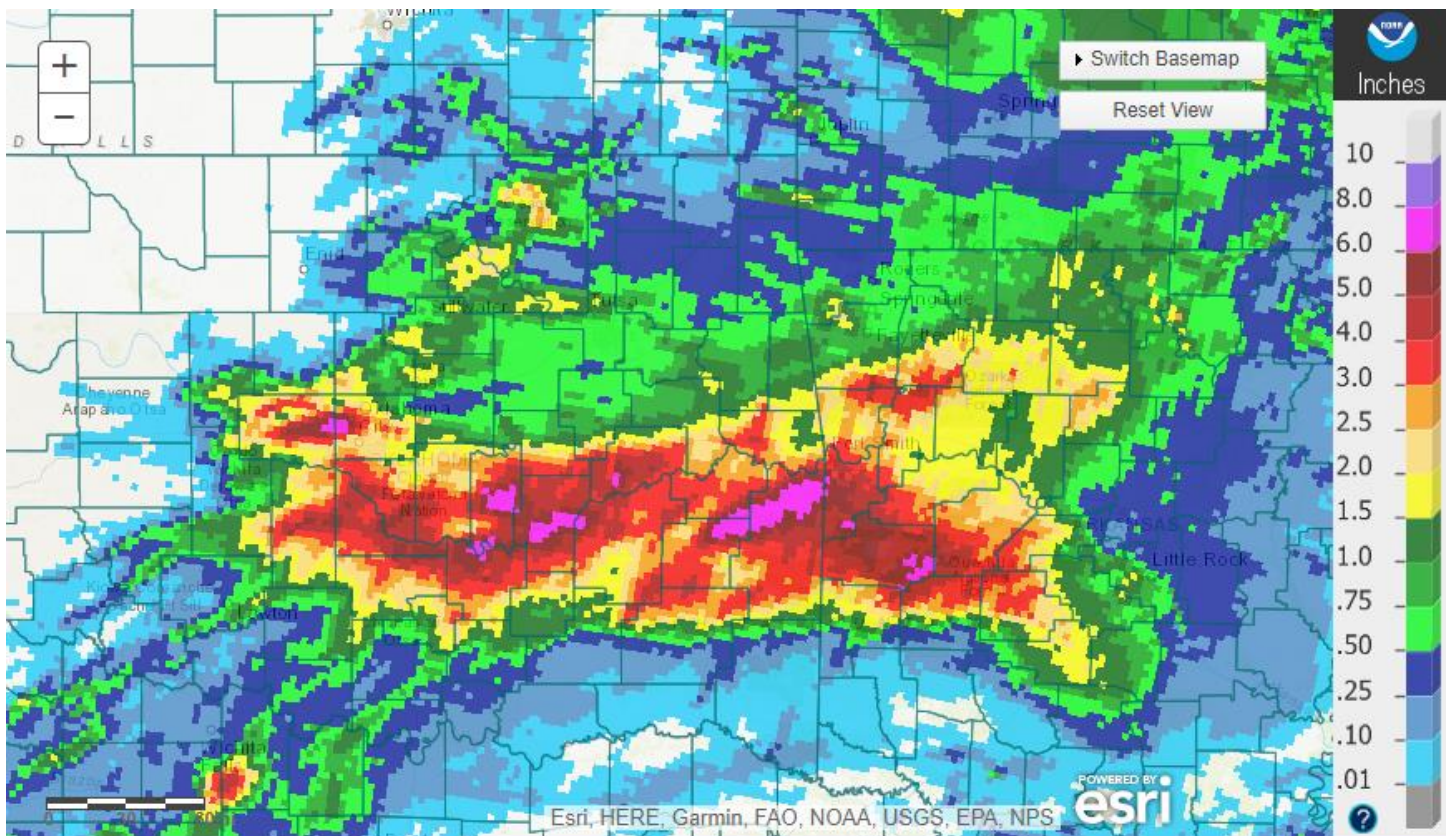


Fig. 5. 24-hour Estimated Observed Rainfall ending at 7am CDT 8/30/2020.



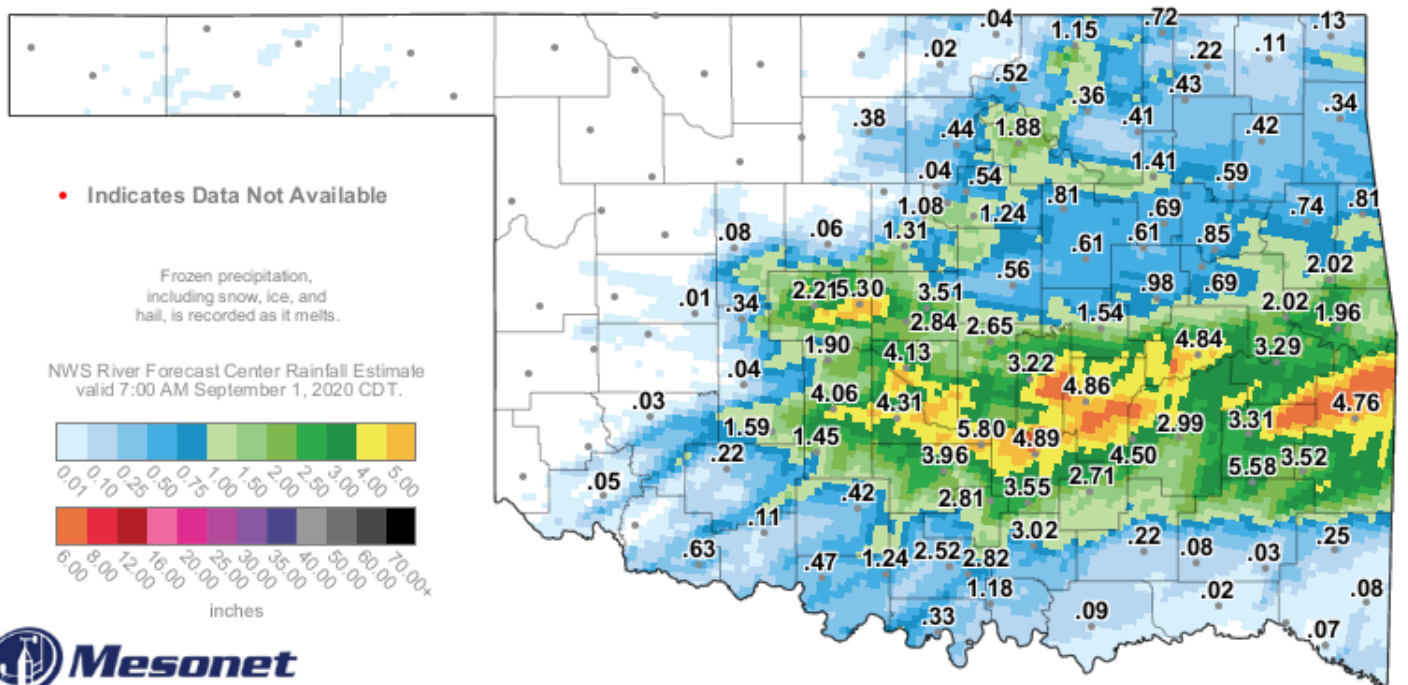
Tulsa, OK: August 31, 2020 1-Day Observed Precipitation
Valid on: August 31, 2020 12:00 UTC

Fig. 6. 24-hour Estimated Observed Rainfall ending at 7am CDT 8/31/2020.



Tulsa, OK: September 01, 2020 1-Day Observed Precipitation
Valid on: September 01, 2020 12:00 UTC

Fig. 7. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/01/2020.

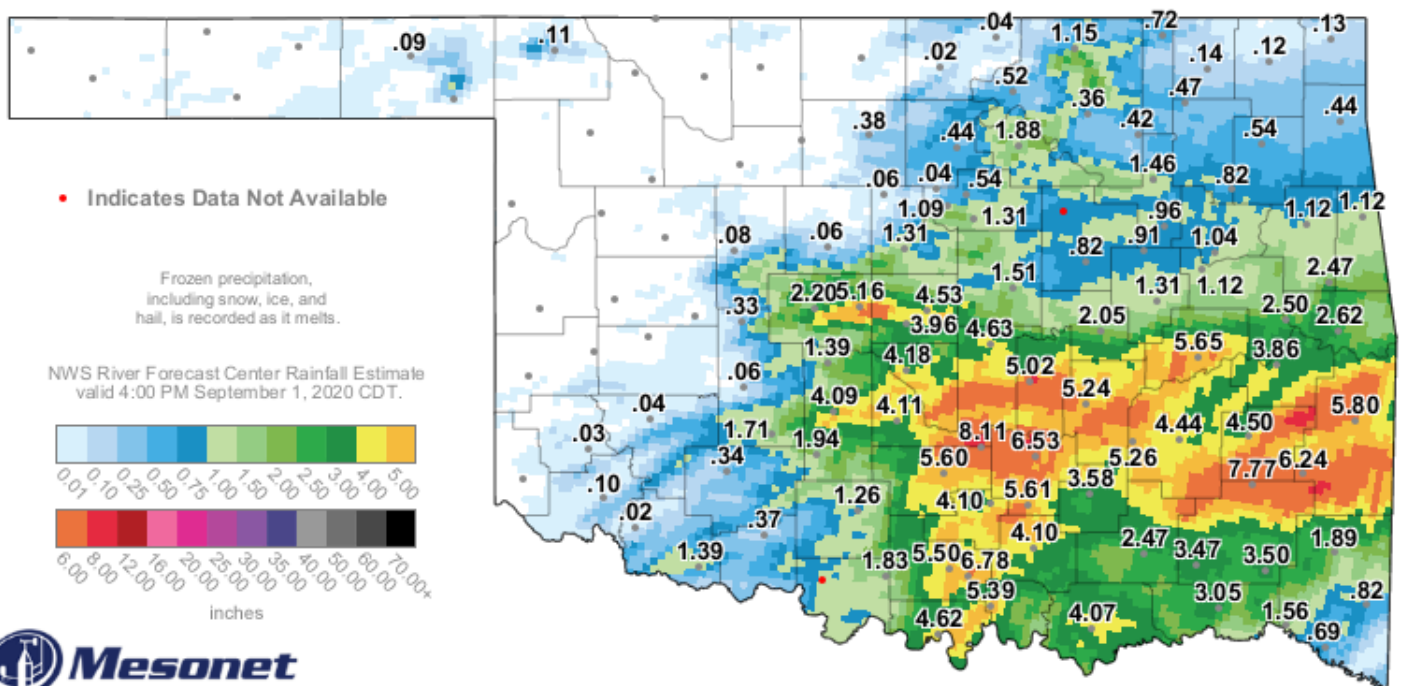


24-Hour Rainfall Accumulation (inches)

8:05 AM September 1, 2020 CDT

Created 8:09:41 AM September 1, 2020 CDT. © Copyright 2020

Fig. 8. OK Mesonet (values) and NWS RFC rainfall estimate (image) 24-hour rainfall ending at 8:05 am CDT 9/01/2020.

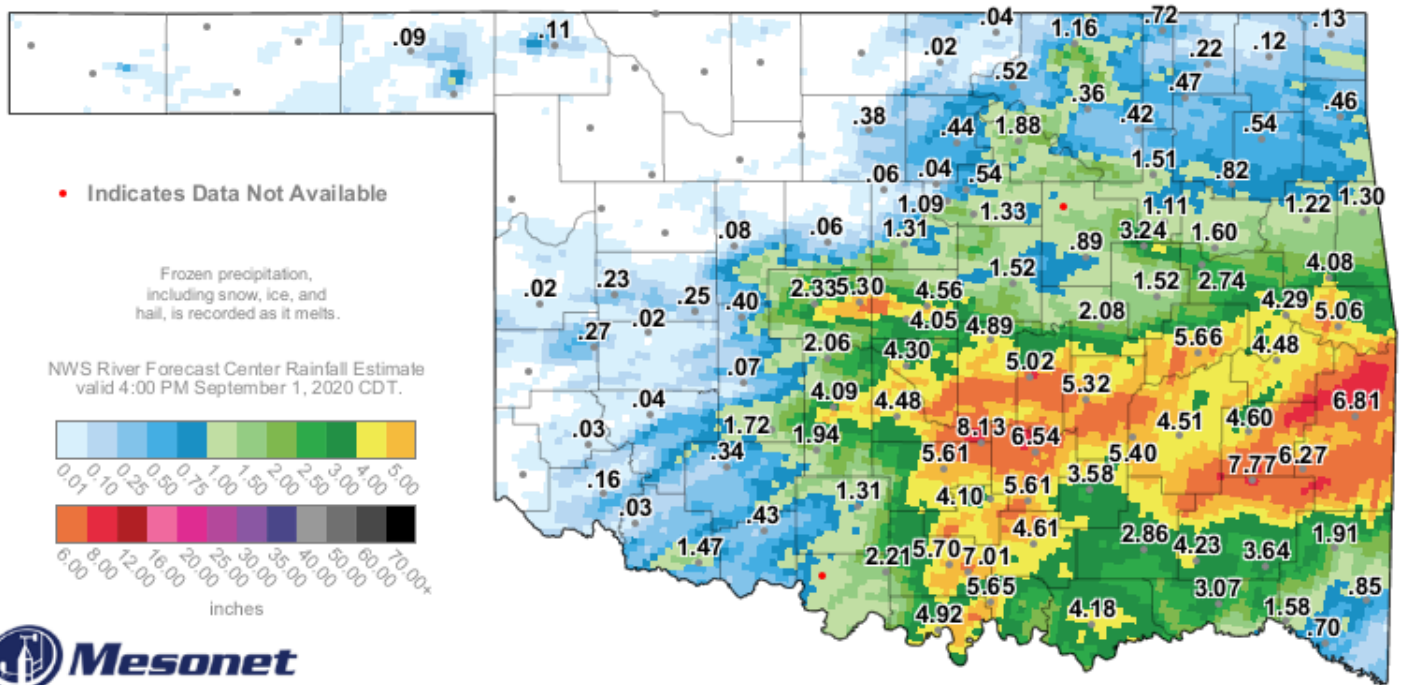


24-Hour Rainfall Accumulation (inches)

5:05 PM September 1, 2020 CDT

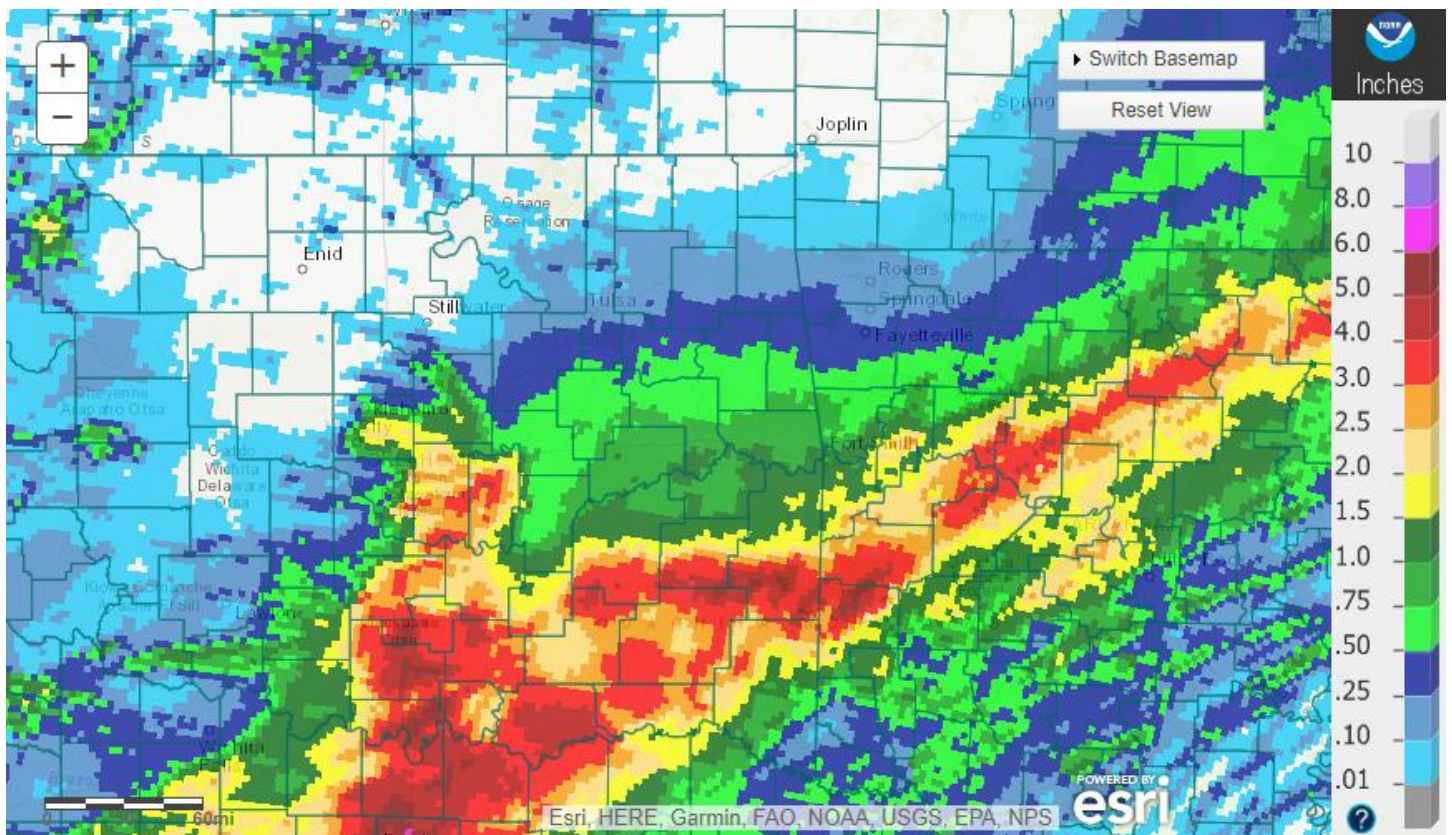
Created 5:11:09 PM September 1, 2020 CDT. © Copyright 2020

Fig. 9. OK Mesonet (values) and NWS RFC rainfall estimate (image) 24-hour rainfall ending at 5:05 pm CDT 9/01/2020.



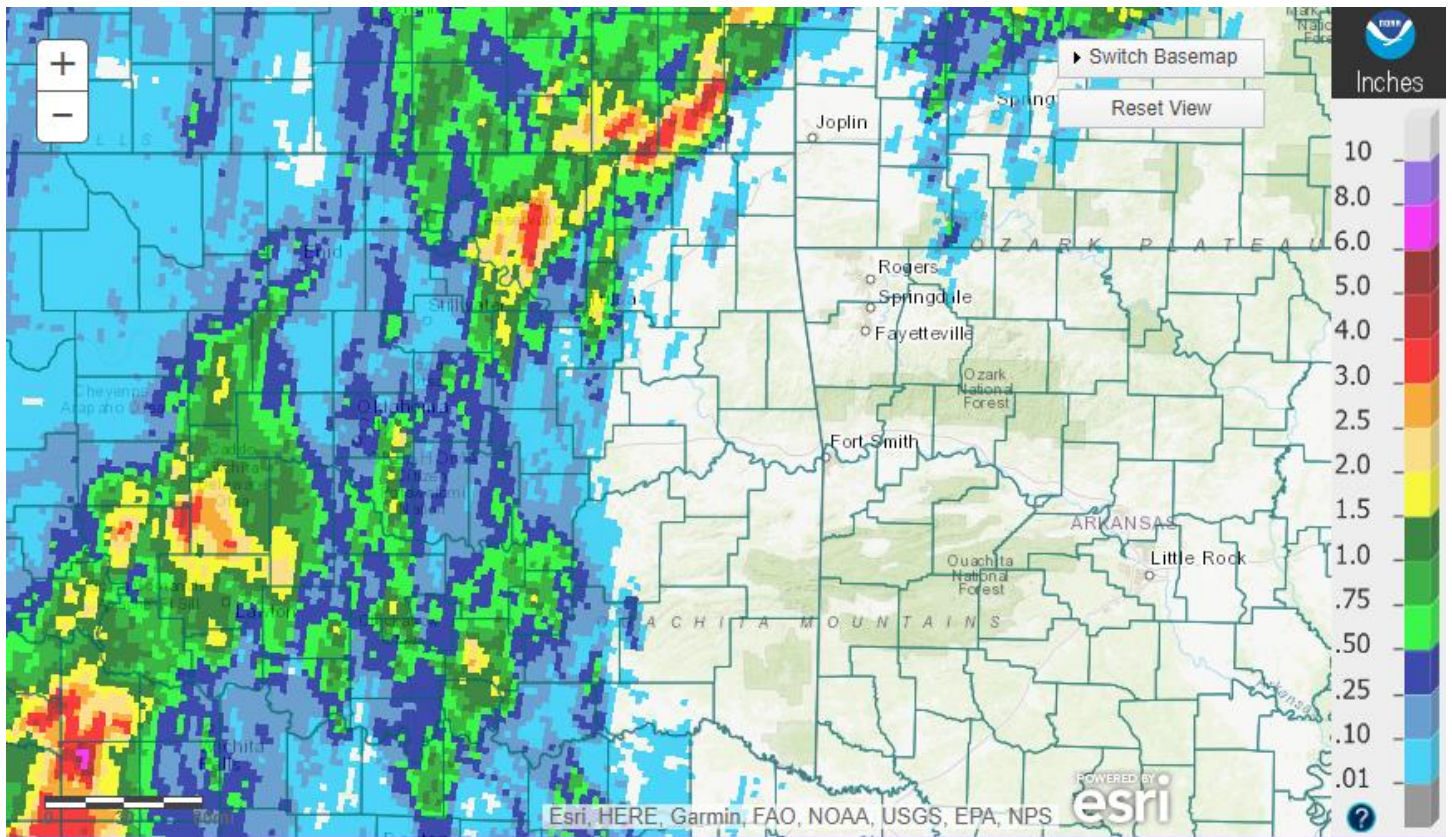
2-Day Rainfall Accumulation (inches)

Fig. 10. OK Mesonet (values) and NWS RFC rainfall estimate (image) 2-day rainfall ending at 5:05 pm CDT 9/01/2020.



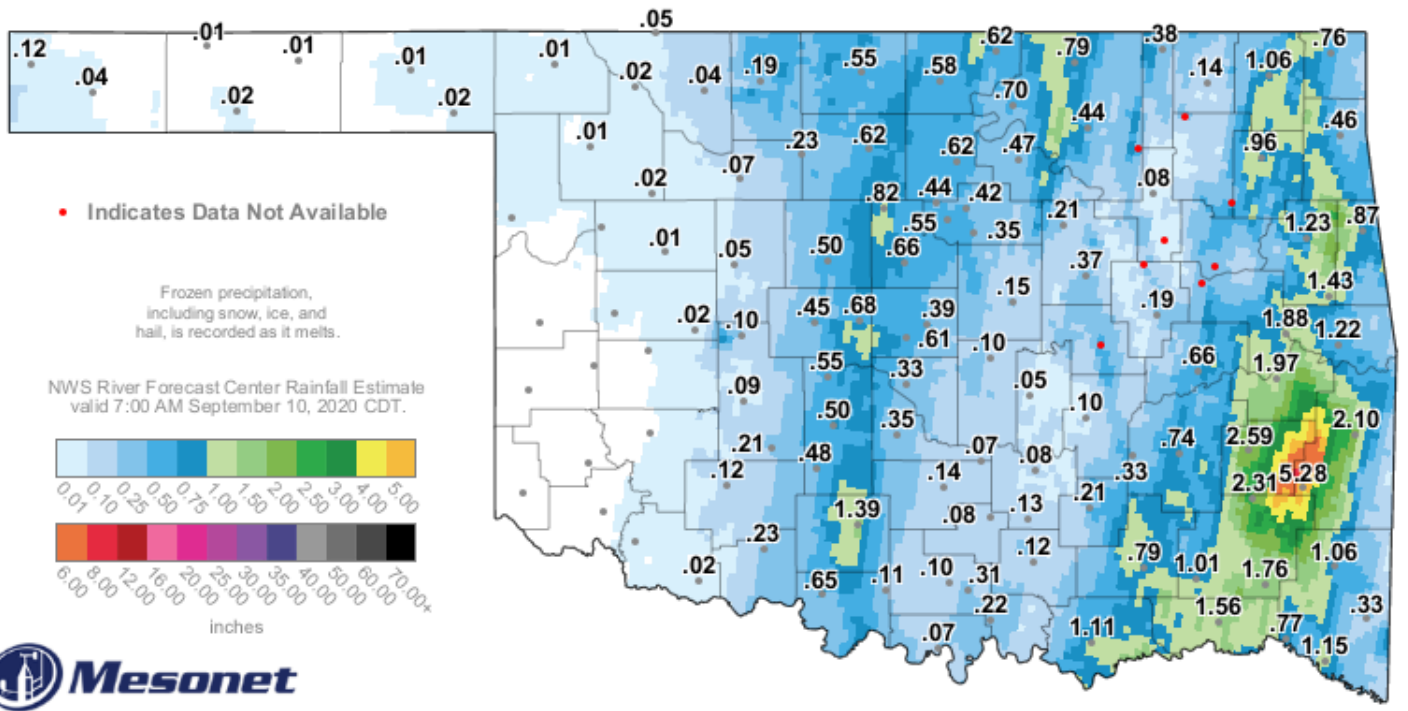
Tulsa, OK: September 02, 2020 1-Day Observed Precipitation
Valid on: September 02, 2020 12:00 UTC

Fig. 11. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/02/2020.



Tulsa, OK: September 09, 2020 1-Day Observed Precipitation
Valid on: September 09, 2020 12:00 UTC

Fig. 12. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/9/2020.

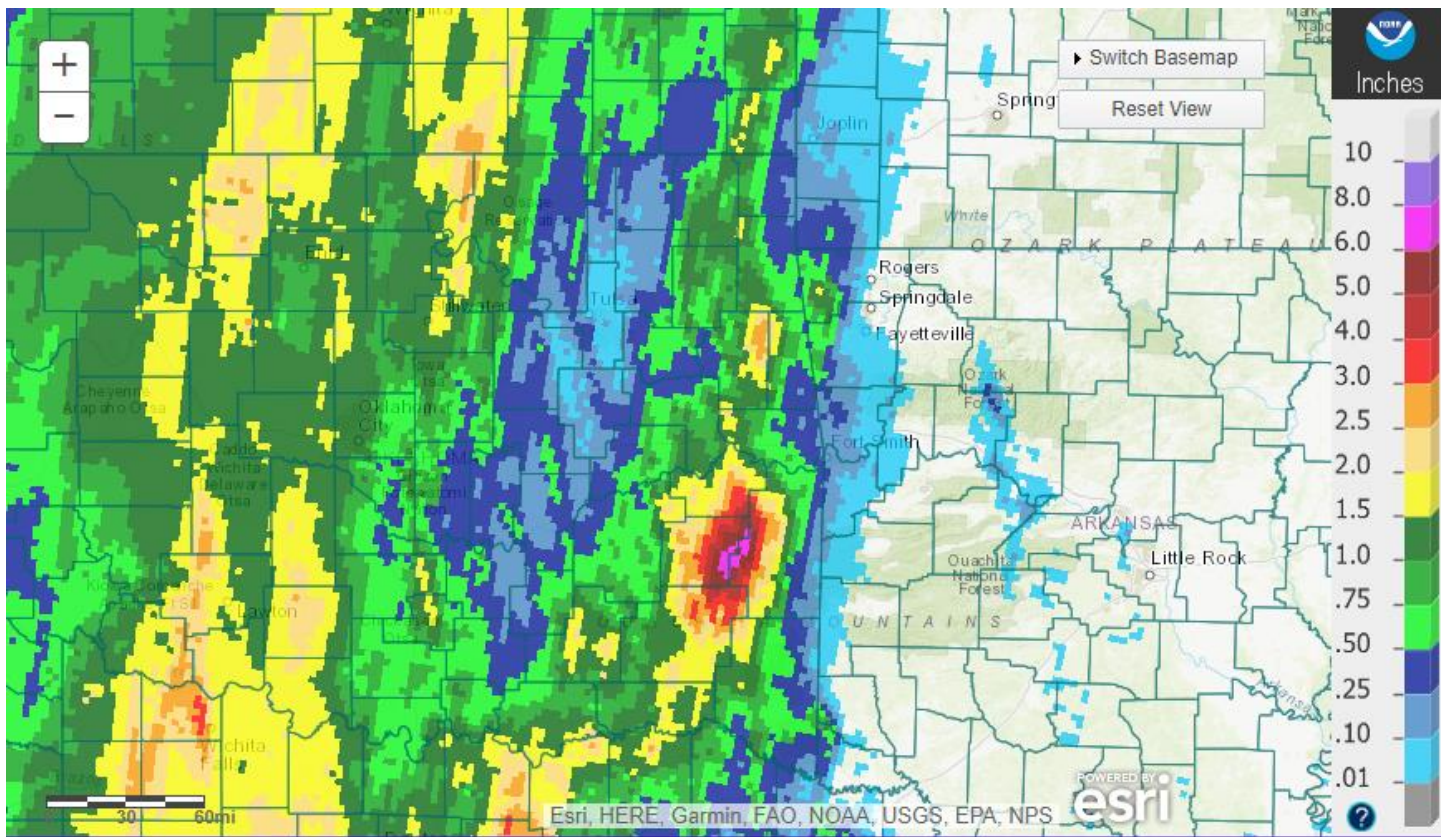


Mesonet
12-Hour Rainfall Accumulation (inches)

8:10 AM September 10, 2020 CDT

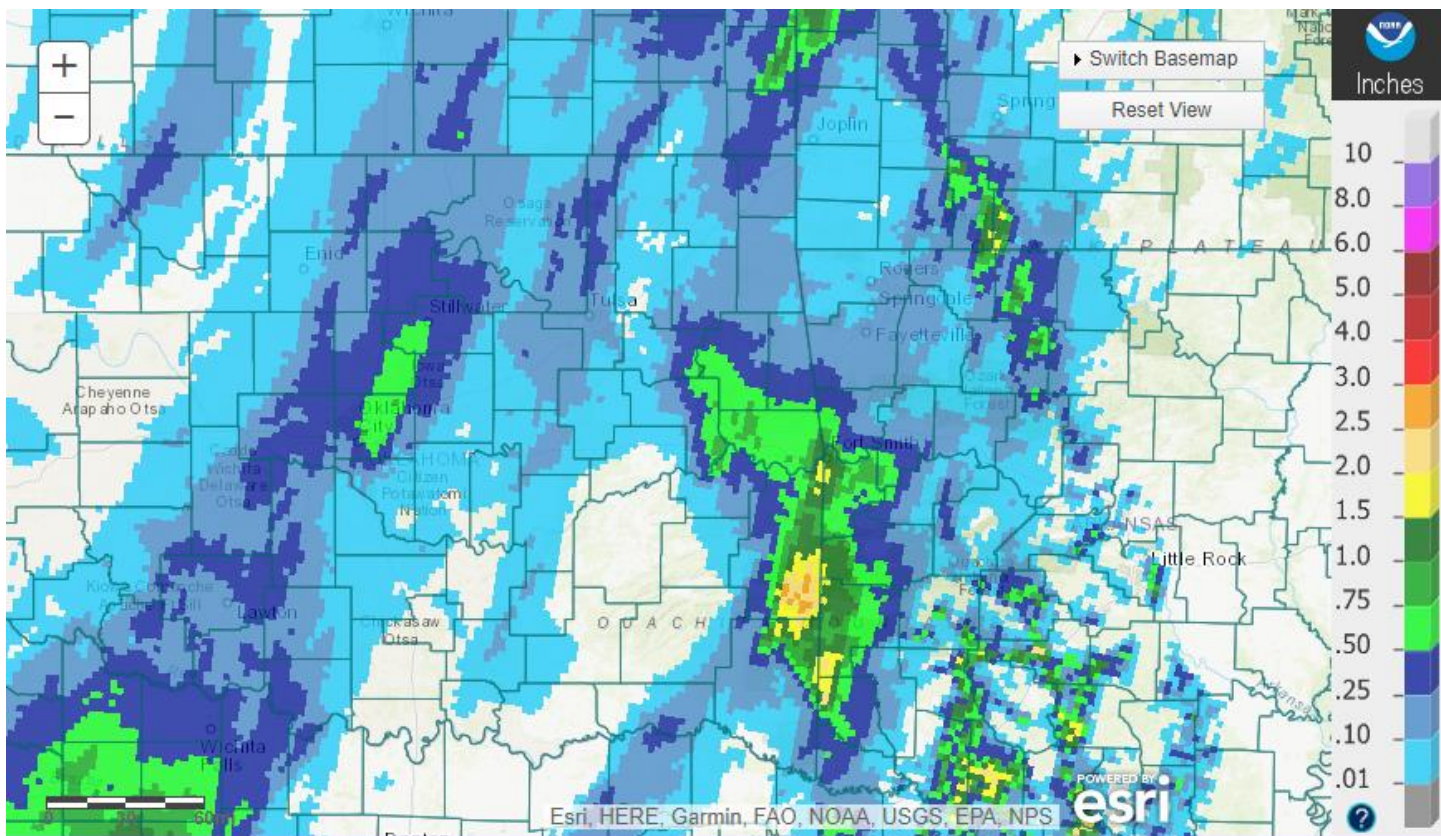
Created 8:15:52 AM September 10, 2020 CDT. © Copyright 2020

Fig. 13. OK Mesonet (values) and NWS RFC rainfall estimate (image) 12-hour rainfall ending at 8:10 am CDT 9/10/2020.



Tulsa, OK: September 10, 2020 1-Day Observed Precipitation
 Valid on: September 10, 2020 12:00 UTC

Fig. 14. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/10/2020.



Tulsa, OK: September 11, 2020 1-Day Observed Precipitation
 Valid on: September 11, 2020 12:00 UTC

Fig. 15. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/11/2020.

Tropical Storm Beta moved inland on the central TX coastline on the 21st. A tropical moisture plume of 2"+ PWAT values was streaming north ahead of Beta into southeast OK and by afternoon, showers and isolated thunderstorms were bringing moderate, to occasionally heavy, rain to the area. This activity continued to expand northward during the evening and overnight hours as an upper-level jet streak approached from the west. By sunrise on the 22nd, scattered showers and isolated thunderstorms were located across a large portion of eastern OK and northwest AR. Large-scale lift continued on the 22nd as a strong mid-level shortwave moved through the region and interacted with the tropical moisture that continued to flow into the area from Beta. The precipitation then ended from west to east during the late afternoon through mid-evening hours as the shortwave shifted east of the area. Most of eastern OK and west central AR received 0.50"-3" of rain in total (Figs. 16-20), with lesser amounts over northwest AR and north central OK.

Showers began to develop over northeast OK and northwest AR during the early evening of the 27th as a strong cold front moved south into the area. The front also brought 40-45 mph wind gusts in its wake. By mid-evening, a line of convection marked the leading edge of the cold front as it continued its progress southeast. The front quickly exited the HSA soon after midnight, with the post-frontal rain exiting the area by 3 am on the 28th. Most of the region received around 0.10" to around 0.75" of rain with this frontal passage, though some locations received 0.75" to 2" of rain (Fig. 21).

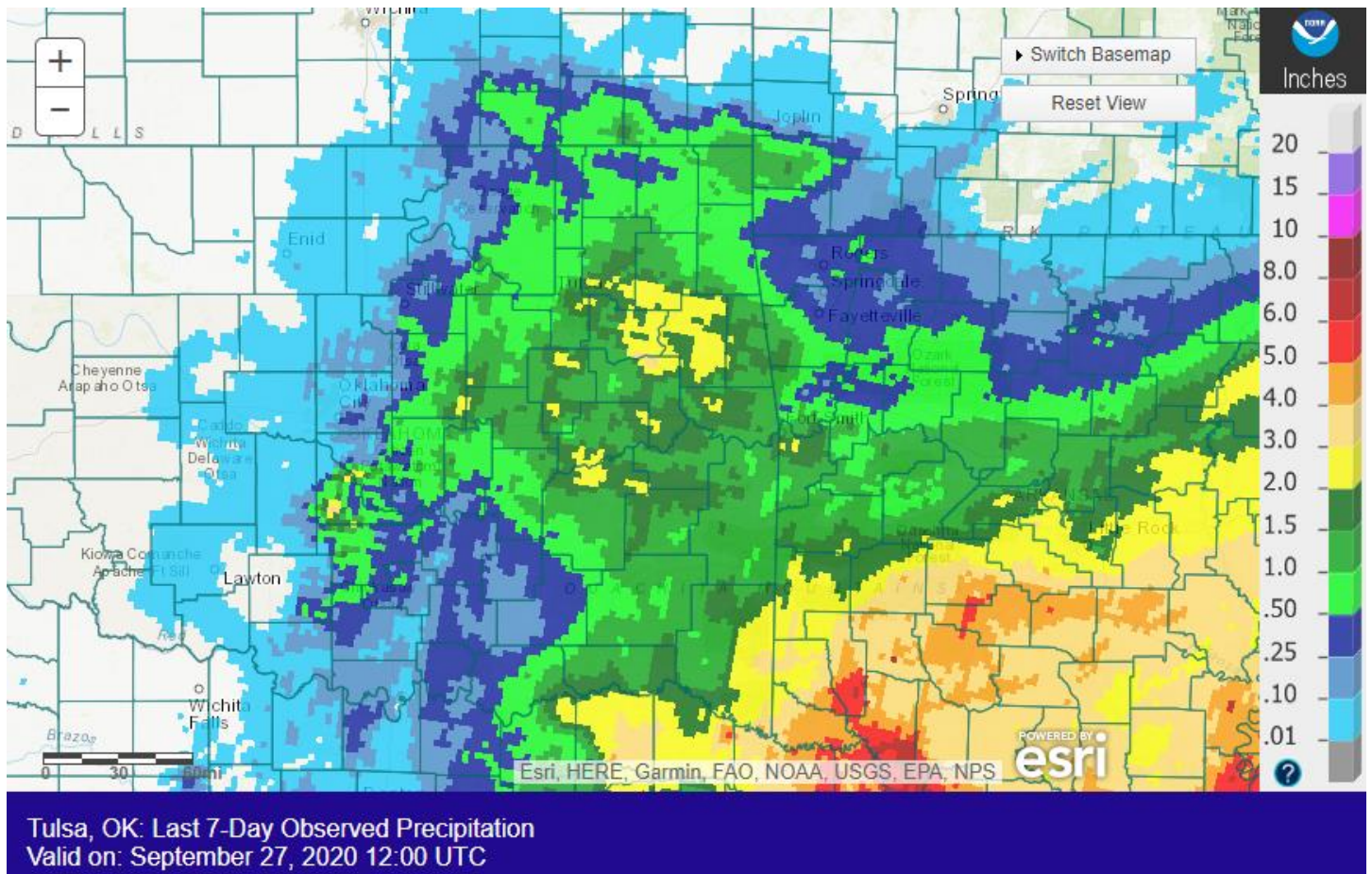
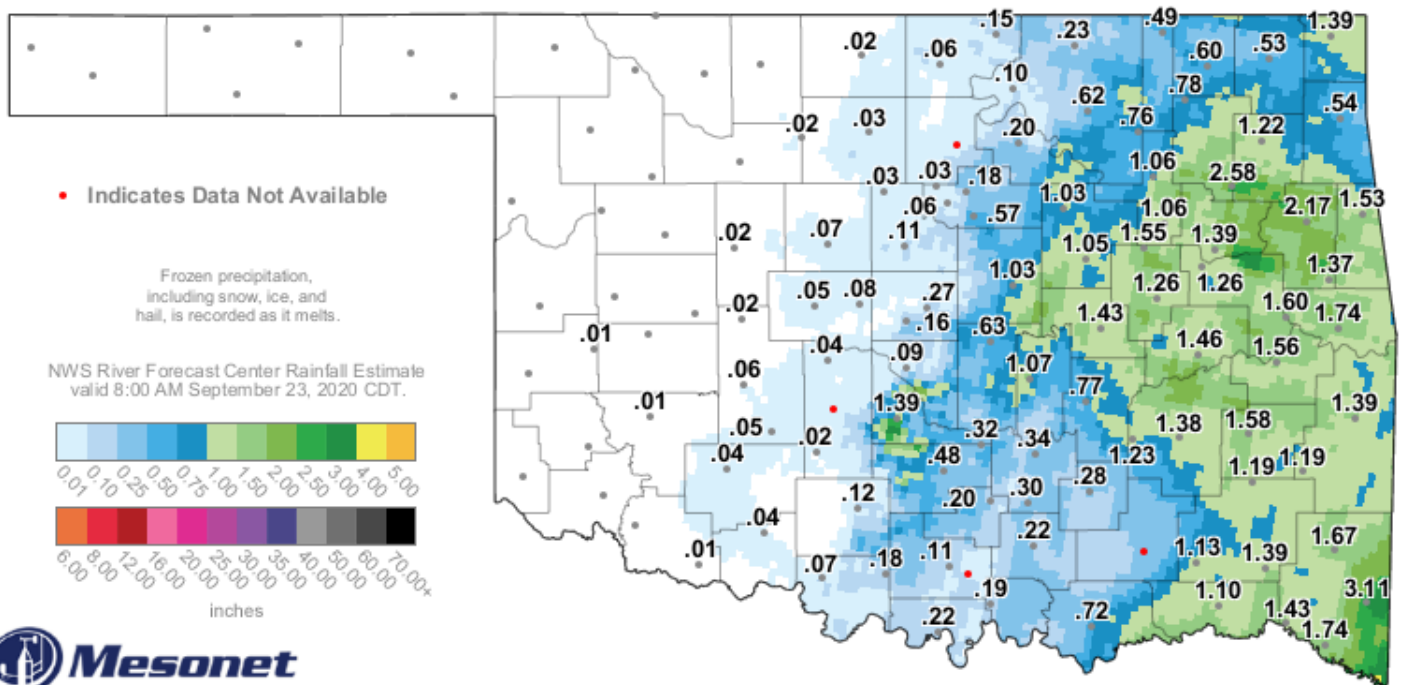


Fig. 16. 7-Day Estimated Observed Rainfall ending at 7am CDT 9/27/2020 showing storm total rainfall for September 21-22.

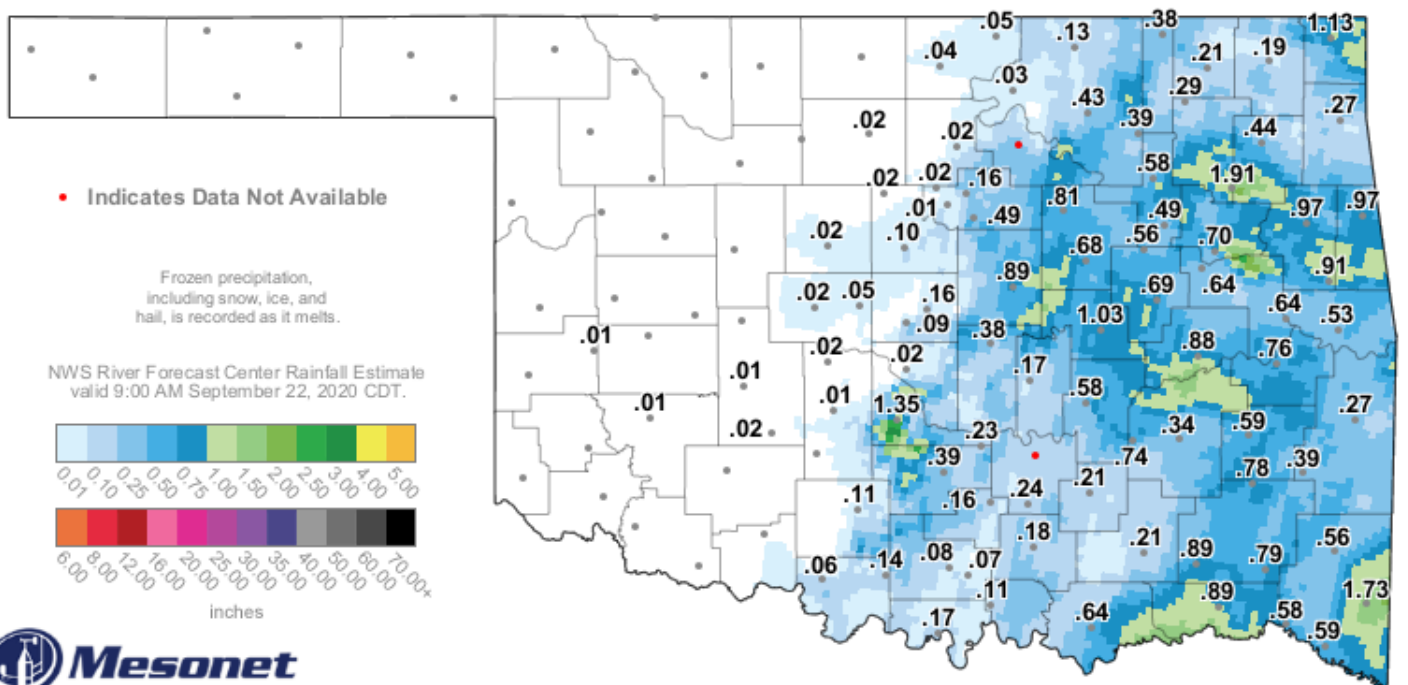


2-Day Rainfall Accumulation (inches)

9:25 AM September 23, 2020 CDT

Created 9:30:56 AM September 23, 2020 CDT. © Copyright 2020

Fig. 17. OK Mesonet (values) and NWS RFC rainfall estimate (image) 2-day rainfall ending at 9:25 am CDT 9/23/2020.

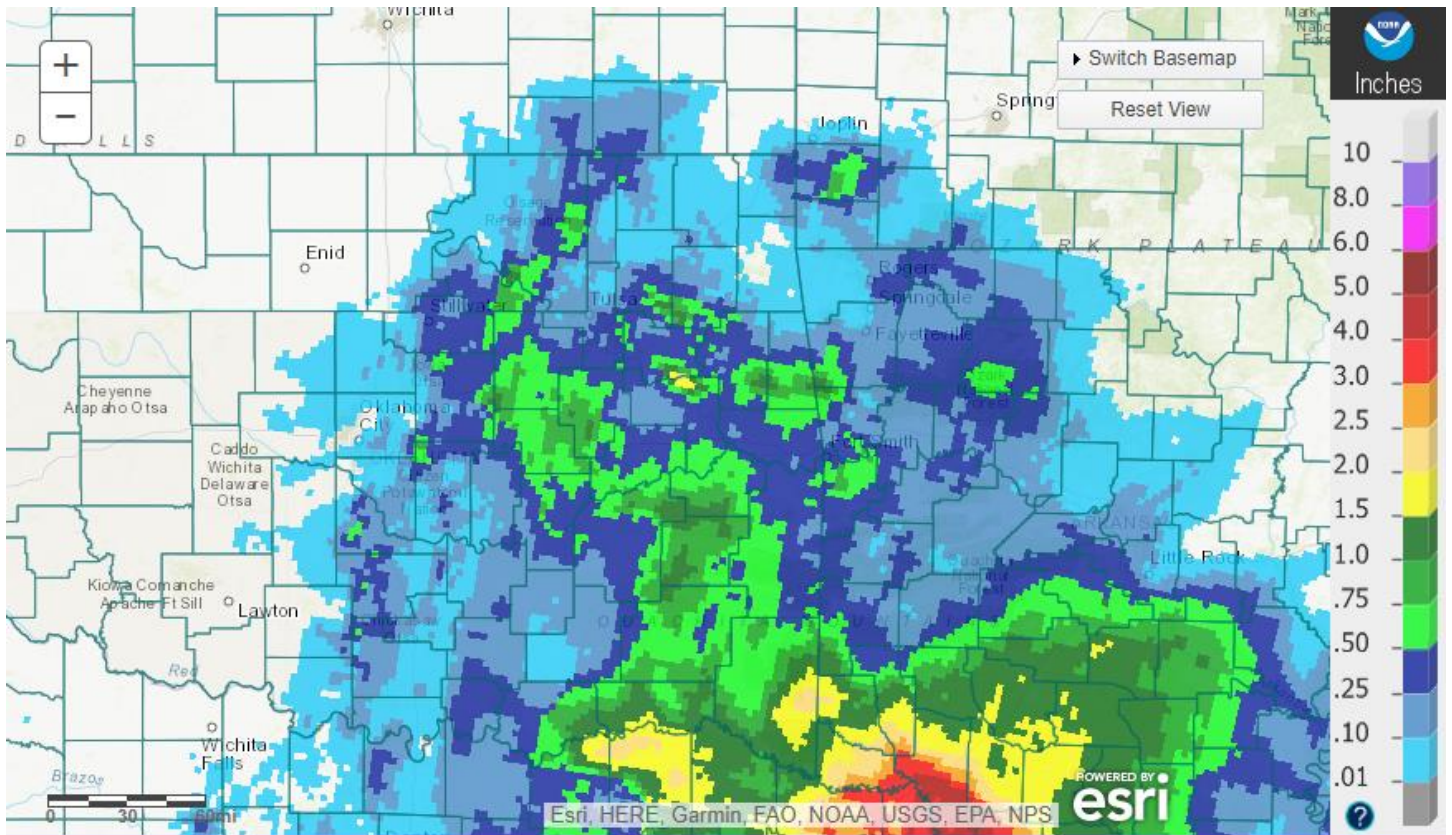


12-Hour Rainfall Accumulation (inches)

9:45 AM September 22, 2020 CDT

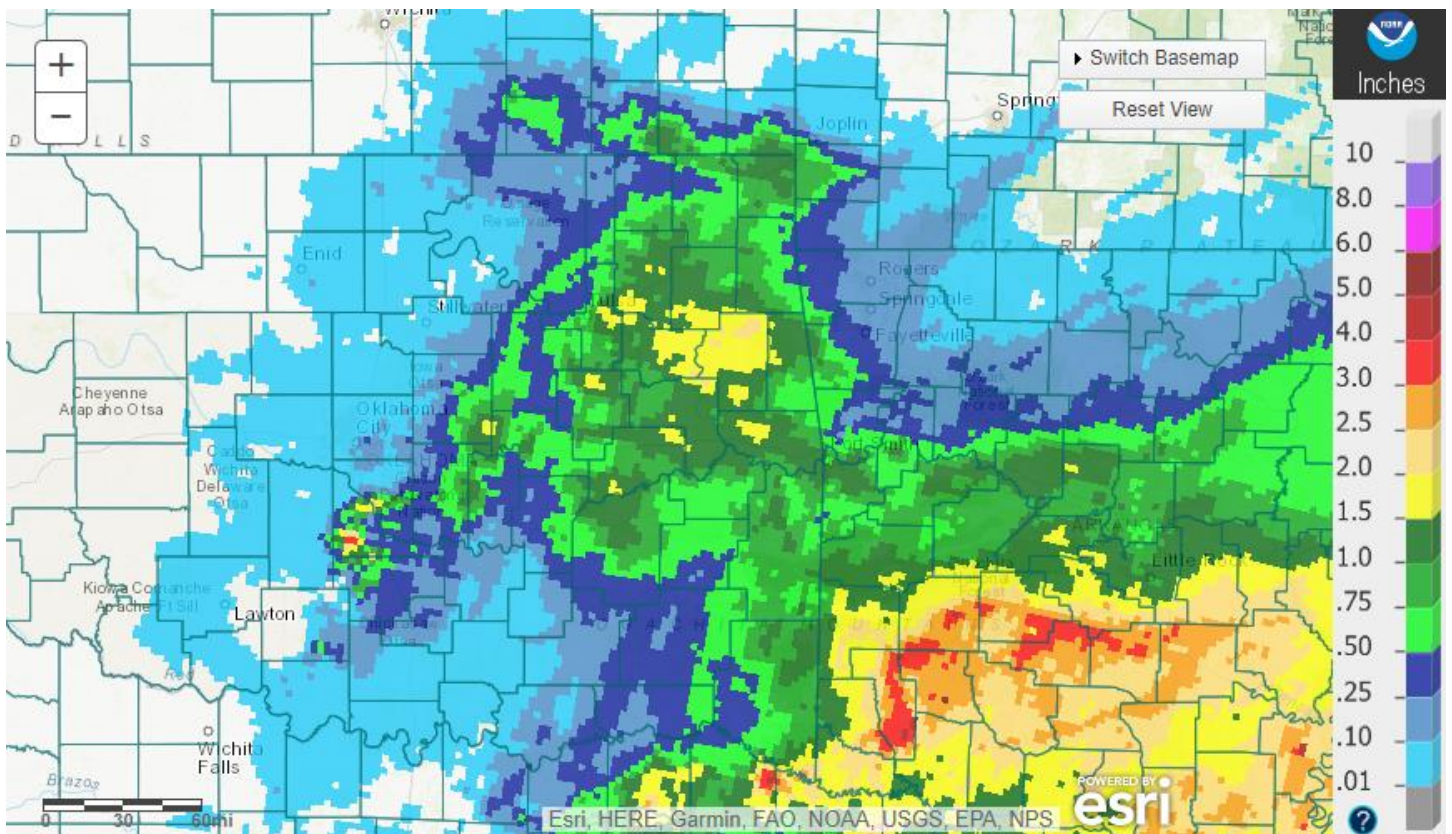
Created 9:50:58 AM September 22, 2020 CDT. © Copyright 2020

Fig. 18. OK Mesonet (values) and NWS RFC rainfall estimate (image) 12-hour rainfall ending at 9:45 am CDT 9/22/2020.



Tulsa, OK: September 22, 2020 1-Day Observed Precipitation
Valid on: September 22, 2020 12:00 UTC

Fig. 19. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/22/2020.



Tulsa, OK: September 23, 2020 1-Day Observed Precipitation
Valid on: September 23, 2020 12:00 UTC

Fig. 20. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/23/2020.

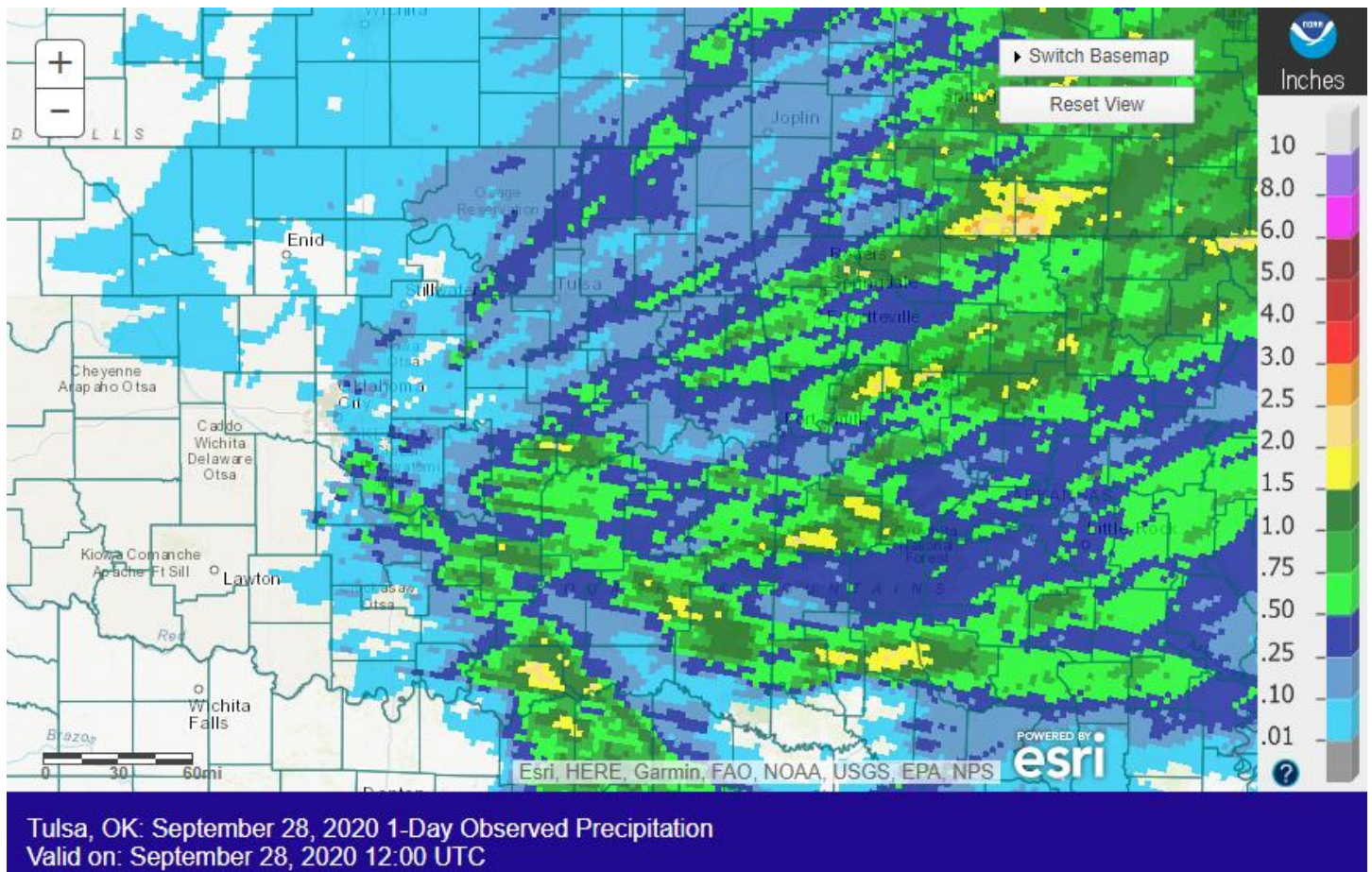


Fig. 21. 24-hour Estimated Observed Rainfall ending at 7am CDT 9/28/2020.

Written by:

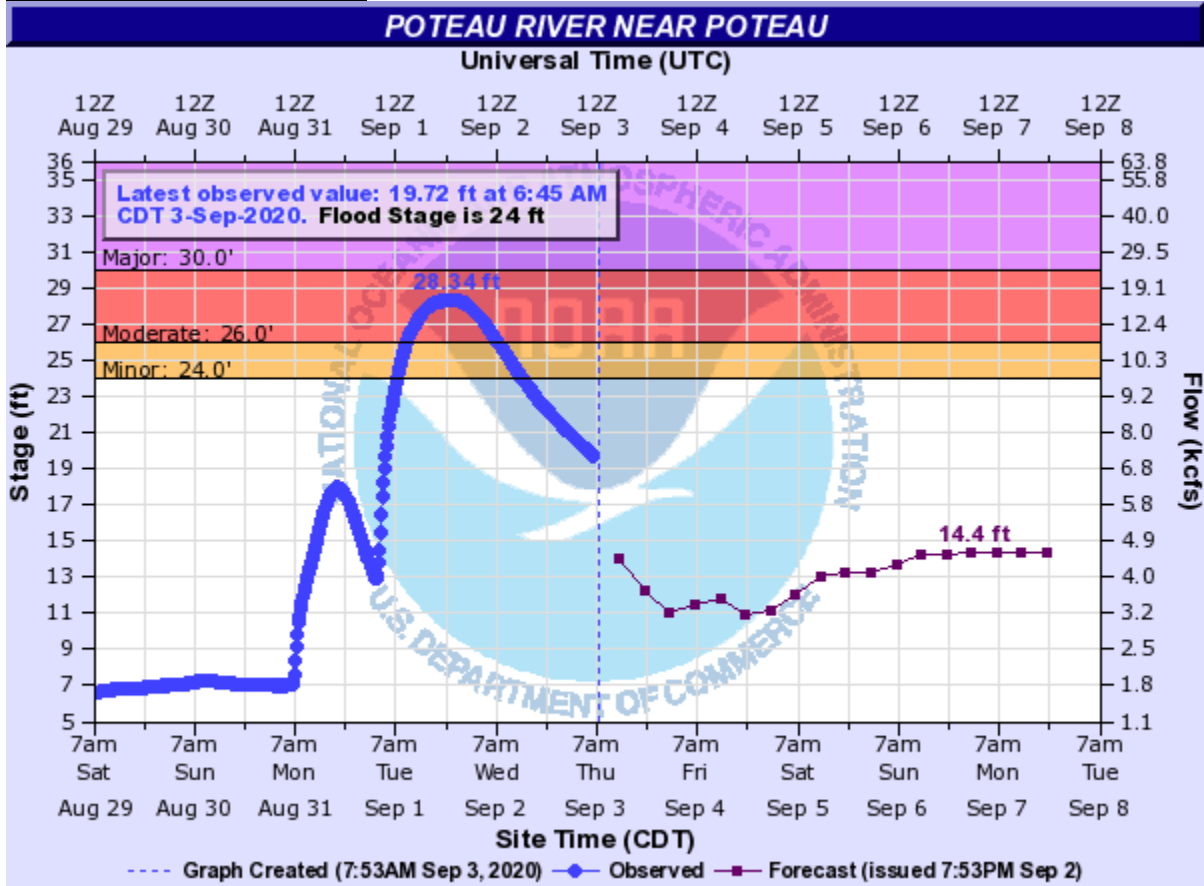
Nicole McGavock
Service Hydrologist
WFO Tulsa

Products issued in September 2020:

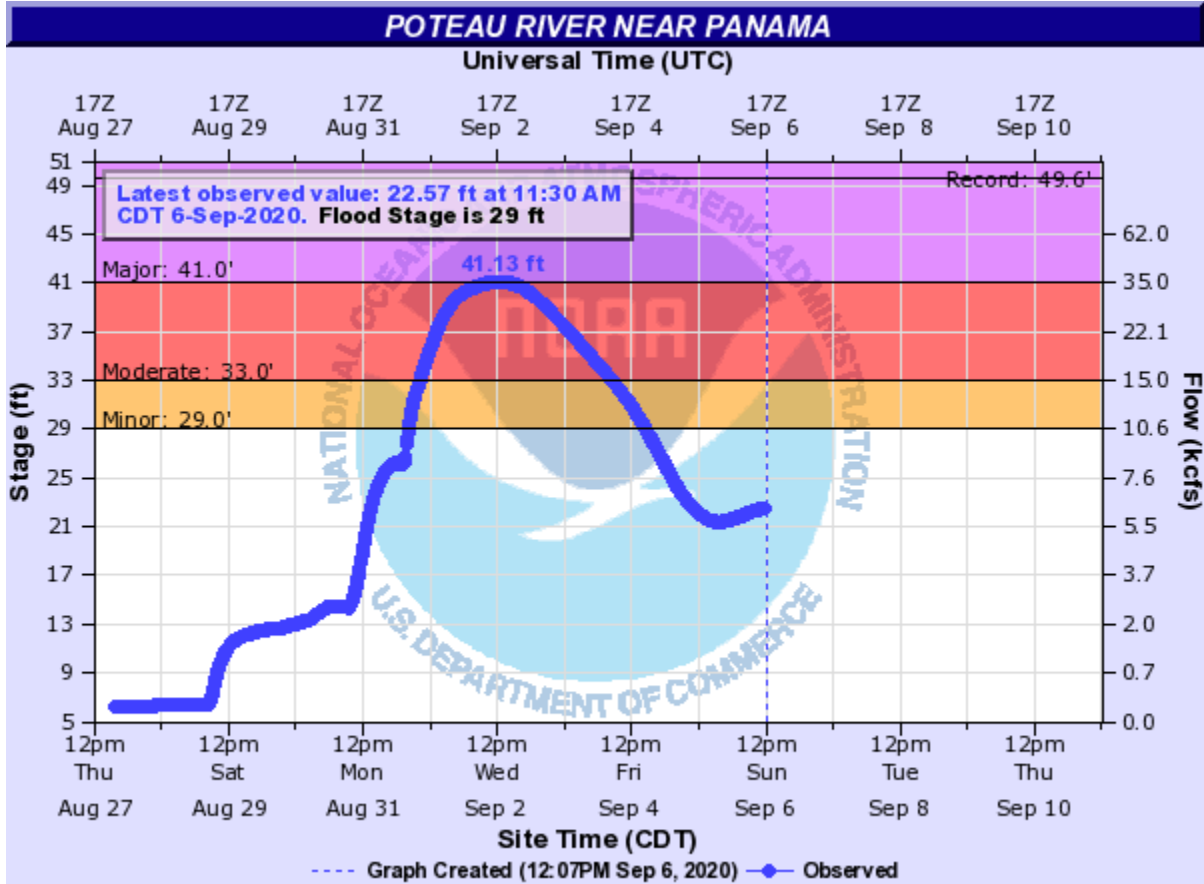
- *CWYO2 became a daily river forecast point September 7, 2016
- *MLBA4 and OZGA4 transferred to NWS Tulsa HSA February 5, 2014
- *Mixed case River Flood products began July 31, 2013

- 13 Flash Flood Warnings (FFW)
- 13 Flash Flood Statements (FFS)
- 0 Flash/Areal Flood Watches (FFA) (9 Watch FFA CON/EXT/EXA/EXB/CAN)
- 16 Urban and Small Stream Advisories (FLS)
- 7 Areal Flood Warnings (FLW)
- 4 Areal Flood Statements (FLS)
- 5 River Flood Warnings (FLW) (includes category increases)
- 33 River Flood Statements (FLS)
- 1 River Flood Advisories (FLS) (2 Advisory FLS CON/EXT/CAN)
- 0 River Flood Watches (FFA) (0 Watch FFA CON/EXT/CAN)
- 0 River Statements (RVS)
- 0 Hydrologic Outlooks (ESF)
- 0 Drought Information Statements (DGT)

Preliminary Hydrographs:



PTAO2(plotting HGIRG) "Gage 0" Datum: 409.4'



PANO2(plotting HGIRG) "Gage 0" Datum: 387.96'

Observations courtesy of US Geological Survey

POTEAU RIVER NEAR PANAMA

Universal Time (UTC)

